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THERAPEUTICS

OF

NERVOUS DISEASES;

INCLUDING ALSO THEIR

DIAGNOSIS AND PATHOLOGY.

BY

CHARLES PORTER HART, M.D.,

LATE PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM IN HAHNEMANN HOSPITAL COLLEGE,
SAN FRANCISCO; HONORARY MEMBER OF THE COLLEGE OF PHYSICIANS AND SURGEONS
OF MICHIGAN; MEMBER OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT
OF SCIENCE; CORRESPONDING MEMBER OF THE CALIFORNIA STATE HOMEOPA-
THIC MEDICAL SOCIETY; FORMERLY SURGEON-IN-CHARGE OF THE SURGI-
CAL WARDS, CHIEF SURGEON TO THE EYE DEPARTMENT, AND
PRESIDENT OF THE BOARD OF MEDICAL EXAMINERS, OF
BROWN GENERAL HOSPITAL, U. S. A., LOUISVILLE,
KY.; AUTHOR OF TREATISES ON "DISEASES
OF THE NERVOUS SYSTEM," "INTRACRA-
NIAL DISEASES," "DISEASES OF
THE SPINAL MARROW AND
ITS COVERINGS,"
ETC., ETC.

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TO

SAMUEL LILIENTHAL, M.D.,

PROFESSOR OF NERVOUS DISEASES IN THE HAHNEMANN HOSPITAL COLLEGE
OF SAN FRANCISCO,

THIS VOLUME

IS RESPECTFULLY INSCRIBED BY HIS FRIEND AND CO-WORKER,

THE AUTHOR.

P R E F A C E.

WHEN the author of this work first published his *Treatise on Diseases of the Nervous System*, our practical knowledge of the therapeutics of nervous diseases was, if not in its infancy, at least far behind what it is to-day. Not only was our clinical experience in many of these affections exceedingly scanty, but as to some of their forms was entirely wanting. Not only so, but much of what was recorded was wholly unreliable, and therefore worthless. It was unreliable, because many diseases of the nervous system which are now known to depend on organic alterations of nerve tissue were then believed to be purely functional, and the temporary ameliorations incident to their course were frequently supposed to be the effects of medical treatment. But now, it may be truthfully affirmed, our knowledge of the pathology and therapeutics of nervous diseases will compare favorably with that of any other class of disorders. The improvement is mainly due to the fact that in most of our colleges competent professors of nervous diseases have for years been constantly and earnestly engaged, not only in imparting a knowledge of these diseases to medical students —among whom are included the majority of our present practitioners—but in clinical investigations, based upon the homœopathic law, many of which have resulted in important therapeutic discoveries. The consequence is, but few definite lesions of the nervous system remain unprovided with remedies possessing well-recognized and clearly defined characteristic properties homœopathic thereto, while the therapeutic effects of those previously employed are now, as a rule, better understood and more specifically determined. In short, it is gratifying to know that we are at present in the full tide of success as regards the study and scientific treatment of this important class of diseases.

No apology, therefore, would seem to be needed for the appearance of the present work. On the contrary, the time has arrived when, in the author's opinion, such a *Manual of Nervous Therapeutics* as is here presented is demanded in the interests of our School.

As the chief excellence of a work of this kind is reliability, the author has been careful to make use of only such material, out of the large amount available for the purpose, as he could safely and fully indorse. Hence, comparatively few of the more recently introduced remedies have been admitted, except under the head of auxiliary treatment. This is especially true as regards those occasionally employed in the treatment of the more common nervous disorders, such as neuralgia, convulsions, etc., for the successful management of which we already have an abundance of well-tried remedies. In excluding a number of the more recent, irregular and unproved remedies, the author is conscious of the fact that he has no doubt omitted some which have proved curative in particular cases. But it is a relief to him to know that deficiencies of this sort are quite unavoidable. As Grauvogl has well remarked: "It is impossible to prepare a *complete* special Therapia for any so-called disease." In other respects, also, the work doubtless has its imperfections, as, indeed, every such work must have, since there is yet a great deal to learn regarding the nature and treatment of nervous and mental diseases. The importance, however, of having what we *do* know concisely set forth will, the author trusts, be regarded as a sufficient excuse, if any were needed, for adding another supplementary volume to his series of works on diseases of the nervous system.

In conclusion he would remark, that his chief aim has been to furnish a handy, practical guide to the successful treatment of every form of nervous disease, by presenting in one small volume the diagnosis, pathology and therapeutics of one of the most interesting, important and progressive departments of medicine.

CHARLES PORTER HART.

Wyoming, O., Sept., 1889.

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THERAPEUTICS
OF
NERVOUS DISEASES.

PART I.

DISEASES OF THE BRAIN AND ITS MEMBRANES.

CEREBRAL ANÆMIA.

Synonyms.—Brain-Fag, Cerebral Hypæmia, Cerebral Hypæmia et Hydræmia, Cerebrasthenia, Neurasthenia Cerebralis; *Fr.*, *Anémie Cérébrale*; *Ger.*, *Anämie des Gehirns, Gehirn-anämie*.

Definition.—A condition in which the blood contained in the cerebral vessels is deficient in quantity or defective in quality.

Diagnosis.—The history of the case is usually sufficient to establish the diagnosis. When, as is sometimes the case, the symptoms resemble those of cerebral hyperæmia, the condition may be recognized by the following comparison:

Cerebral Anæmia.	Cerebral Hyperæmia.
Patient anæmic, weak and pale.	Patient plethoric, red face.
Disposition to sleep.	More or less insomnia.
Pulse small and weak.	Pulse full.
Neuralgic headache, chiefly limited to forehead and vertex.	Cephalalgia of a dull, aching character, and diffused.
Pupils dilated.	Pupils contracted.
Relieved by stimulants and horizontal position.	Aggravated by stimulants and by lying down.
Anæmic murmurs.	No abnormal heart sounds.

Pathology.—That the characteristic symptoms of cerebral anaemia are due, in most cases, to an insufficient supply of blood to the brain may be readily shown by diminishing the supply by compression of the carotid arteries, or by simply suppressing the breathing. When caused by an impoverished condition of the blood, the nutrition of the brain suffers through a deficiency of the red corpuscles, which are the carriers of oxygen. In these cases the effects are similar to those resulting from a deficiency in quantity, the chief difference being that the symptoms are gradually instead of suddenly developed.

Clinical Experience.—*China, Ferrum and Digitalis*, aided by a blood-making diet, have generally proved successful where there was a deficiency of blood, the Digitalis being most useful in cases attended by feeble action of the heart. The *vaso-motor* form of cerebral anaemia generally yields promptly to *Amyl nitr.*, *Glonoin*, *Picric ac.* and *Amm. brom.* 3x. Chronic cases have been greatly benefited by *Nux vom.* and *Phosphorus*. *Vertigo* generally yields to *Ac. fluor.*, *Baryta carb.*, *Graph.*, *Lycop.* and *Silicea*. Hale has found *Atropine*² "an admirable remedy in cases of advanced typhoid, when, with the general prostration, there is insomnia, with incoherent mumbling, coma vigil and very dry tongue." I have found *Picric ac.*⁶ well suited to this condition.

Therapeutic Indications.—*China*.—This remedy justly stands at the head of the list of remedies for anaemia, when caused by the excessive loss of animal fluids, as in haemorrhage, diarrhoea, leucorrhœa, spermatorrhœa and overlactation. Its best effects are observed only after the drain upon the system has been arrested. The symptoms calling for it are: *headache, especially in the morning*; *ringing in the ears*; *pale, cold face*; *coldness of the extremities*; *great debility*; *tingling and trembling, or twitching, of the muscles and limbs*; *palpitation of the heart*; *faintness*, which is relieved by lying down; *insomnia*; *vertigo*, especially on raising the head.

Arsenicum.—This is a good blood-making remedy, and is best adapted to cases where the blood has become too watery, or depraved, as in malarial fever, chronic quininism and chlo-

rosis. It is also suited to cases aggravated by injudicious use of Ferrum. The indications are: *great prostration, with rapid sinking of the vital forces*; hammering headache; coldness of the extremities; *restlessness*; bloating of the hands, feet and face; *thirst for small quantities of water*; *nausea*; tendency to syncope on raising the head; vertigo, with vanishing of the senses; chilliness; mental depression.

Ferrum.—Cerebral anæmia dependent on *hydræmia*, as shown by great pallor of the face, lips and buccal mucous membrane; *bellows-sound of the heart*; muscles flabby and weak; beating headache; slight exertion produces shortness of breath and exhaustion. This remedy is generally best adapted to chlorotic cases and to those resulting from passive haemorrhages.

Avena sat.—Coldness of different parts of the body, depending upon want of nerve-force; brain-fag; nervous debility of school teachers and professional men; women who have become anæmic and debilitated by household cares, worry, over-nursing, etc.

Nux vom.—Anæmia from mental exhaustion or overwork, as in students and professional people; also the anæmia resulting from debauchery and overstimulation, the long-continued use of ardent spirits, late hours and high-seasoned food. Especially indicated in all cases where there is gastric irritation, indigestion or constipation; *nausea and vomiting, with frequent eructations of sour-smelling fluids or food*; insomnia; muscular twitchings; trembling of the hands; frequent cramps.

Camphor.—*Syncopal form*, resulting from the rapid loss of vital fluids, and causing *great embarrassment of the respiration and circulation*, spasms and convulsions; coldness of the body, vertigo and loss of consciousness. This is a transiently acting remedy, but very useful in meeting the primary symptoms, especially when caused by diarrhœa, cholera, etc.

Ignatia.—Cases occurring in weak, *hysterical subjects*, or in women who have become *anæmic through grief or mental anxiety*; melancholy, taciturn, nervous, seeks solitude, *frequently gives way to tears*; sinking sensation at the pit of the stomach; constipation; *overlactation*.

Helonias.—Cases resulting from diseases of the female sexual

organs; menorrhagia; leucorrhœa, with general atony; prolapsus uteri; *loss of sexual appetite*; pains in the back from weakness and congestion; *pulsative pains in the top of the head*, increased by stooping, and attended by vertigo.

Pulsatilla.—Cerebral anaemia due to impoverishment of the blood, and associated with *menstrual irregularity*, especially in *young girls approaching the period of adolescence*; *amenorrhœa*, with vertigo, chilliness, peevishness, aching pain in the small of the back, beating headache, aggravated by stooping, bloating of the face, hands and feet; *hysterical cases*, with pale face, disposition to faint and tremulous weakness.

Cina.—Hydrocephaloid cases, with *marked paleness of the face*, especially *around the nose and mouth*; transient dizziness, with double vision and obscuration; *dilated pupils*; spasms and convulsions; paresis; verminous irritation, producing irritative fever.

Ipecacuanha.—Anaemia produced by the summer complaint in children, and attended with *nausea*, with or without vomiting, *pale face, with blue margins around the eyes*, coldness of the extremities; restlessness and sleeplessness, or else great drowsiness; *convulsive movements of the limbs*; *stools frequent, emerald-green, fœtid, and ejected with great force*.

Calcarea phos.—Chronic cases, caused by malnutrition; *anaemic headache of school girls*; weakly, anaemic children, with *retarded development*, especially of the teeth and osseous structures; hydrocephaloid cases.

Zincum.—Well adapted to old *chronic cases*, especially when caused by the abuse of potassium bromide. Great mental and bodily depression; cold extremities; twitching of the muscles, with paralytic weakness; *aching in the forehead after reading, writing or study*; *loss of memory*; restlessness at night, with frightful dreams.

Zincum phos., brom. and pier.—The indications for the employment of these remedies are: brain-fag of business men, teachers and professional men, who have become pale, haggard, weak and sleepless from overwork, worry and prolonged mental exertion.

Veratrum album.—Acute cases caused by *violent purging*, at-

tended with *fainting, spasms and convulsions*, and followed or accompanied by paralytic weakness.

Secale cor.—Anæmia complicated with *diarrhœa* or *metrorrhagia*, or with *spasms and convulsions*; small, intermitting pulse; tinnitus aurium; delirium; loss of consciousness; numbness and coldness of the limbs.

Natrum sulph.—*Watery condition of the blood*; constant chilliness; hydrogenoid constitution; trembling of the body, with jerking of the limbs; great languor and prostration.

Natrum mur.—Cerebral anæmia due to *malarial poisoning*; profound melancholy; *circulation excited by every movement of the body*; great weakness and constipation; pale, sallow complexion; effects of onanism.

Sulphur.—Chronic cases, occurring in cold, phlegmatic, serofulous constitutions; also when preceded or accompanied by eruptions, or when caused by their suppression; also as an intercurrent remedy, or when indicated medicines fail to produce any lasting benefit.

Auxiliary Treatment.—When the anæmia is due to a sudden or copious loss of blood, its quality should be improved by such articles of diet as are not only easy of digestion, but rich in blood-making elements; such as beef, milk, eggs, game, fish, oysters, vegetables, etc. Only good food makes good blood; hence pies, pastry, rich cake and all unwholesome articles of diet should be strictly forbidden, and not permitted to displace a liberal allowance of good nutritious aliment. Fresh air and exercise are also of great importance, especially in chronic cases. An ocean voyage, exposure to the mountain or sea air, or even a complete change of climate, may be required in order to fully restore the patient to health. In very bad cases, rest in the horizontal position, massage and electricity may not only be found serviceable, but even indispensable. Salt-baths and sea-bathing are invigorating, and can generally be practiced with great benefit, provided proper precautions are taken at the commencement, and the exposure made to correspond at all times with the strength and susceptibility of the patient.

CEREBRAL HYPERÆMIA.

Synonyms.—Congestion of the Brain; *Fr.*, *Hyperémie Cérébrale*; *Ger.*, *Hyperämie des Gehirns, Gehirn-hyperämie*.

Definition.—An increase in the quantity of blood within the cerebral vessels, causing a condition of congestion, undue pressure and more or less irritation.

Diagnosis.—Congestion of the brain should be carefully distinguished from cerebral anaemia, auditory and gastric vertigo, epilepsy, embolism and thrombosis of cerebral blood-vessels, softening of the brain and urinæmia, to all of which its symptoms bear more or less resemblance. The differential diagnosis between cerebral congestion and cerebral anaemia is given under the latter head, and need not be repeated here.

Cerebral congestion differs from cerebral haemorrhage in the apoplectic symptoms being less pronounced. Thus, there are no stertorous breathing and no puffing of the lips; nor are consciousness, sensibility and the power of motion completely lost, as in cases of haemorrhage.

Auditory and gastric vertigos are simply ear and stomach troubles, the former due to disease of the semicircular canals, and the latter to indigestion, which is always present at the time of the attack.

In epilepsy an *aura* is often present, and this is generally followed by a peculiar cry; the patient falls suddenly, instead of slowly, to the ground, and the tongue is frequently bitten, none of which symptoms belong to cerebral congestion.

In embolism the pulse and respiration are disturbed, being more or less irregular and rapid, owing to valvular disease of the heart, which is usually present; the heat of the head is not increased in this disease, there is no premonitory stage, and the symptoms are more permanent than they are in cases of cerebral hyperæmia.

In thrombosis, aphasic and paralytic symptoms are usually present from the beginning, and, notwithstanding occasional remissions, they gradually become more and more pronounced as the disease progresses.

In cerebral softening the accession may be either gradual

or sudden, but the paralysis is permanent and progressive, the speech is seriously impaired, the intellect is feeble and the disease fatal.

Urinæmia may be distinguished from cerebral congestion by the evidence afforded by a chemical and microscopical examination of the urine, by the anasarca condition of the face and limbs, and by the frequent recurrence of convulsions and coma.

Pathology.—The essential pathological element in cerebral hyperæmia is the congested state of the capillary vessels of the brain, and to this is due the functional disturbance or irritation of that organ. The congestion is *active* when, owing to arterial dilatation, oxygenated blood passes rapidly through the cerebral capillaries; and *passive*, when, from venous obstruction, the capillaries contain mostly venous blood, which moves sluggishly through them.

Clinical Experience.—*Aconite*, *Glonoin*, *Belladonna* and *Hyoscyamus* are generally prescribed in cases of acute active congestion, the last two being preferred when there is a marked tendency to delirium. Hale uses large doses (15 grs.) of *Natr. brom.* and *Kali brom.* in these cases, which he pronounces superior to either *Aconite* or *Belladonna*. *Opium* and *Apis* have been given successfully in the apoplectic form, or when there was great cerebral depression. *Gelsemium* and *Veratrum vir.*, both low, are usually given in cases of recent passive or venous hyperæmia, the latter being preferred when the blood pressure is very great, the face livid and the veins greatly distended. *Nux vom.* and *Arnica* are used in chronic cases, the former being prescribed for high livers and persons of sedentary life, and the latter in paralytic cases, or where there is a suspicion of thrombosis. *Bryonia*, *Phosphorus*, *Salicylic ac.* and *Cuprum* have also been given successfully in special cases.

Therapeutic Indications.—*Glonoin*.—Acute active congestion of the brain, with strong beating of the carotid and temporal arteries, contracted pupils and very rapid pulse; throbbing headache, with flashes of light before the eyes; tinnitus aurium; fulness in the forehead and vertex, with mental dulness; vertigo, with impaired vision; great restlessness and im-

patience in mild cases; apoplectic and epileptiform cases, especially when caused by exposure to the sun's heat or by menstrual suppression.

Belladonna.—Acute cases attended by *delirium* or by spasms and convulsions; redness of the face and eyes; morbid vigilance; sensitiveness to light and noise; contraction of the pupils; *stiffness of the tongue and neck*; throbbing headache; *great mental excitement*; *double vision*; children start suddenly when falling asleep.

Aconite.—Great restlessness and anxiety, with *dry, burning skin and a full bounding pulse*; throbbing in the head, with sense of fulness and heaviness; contracted pupils; vertigo, especially when stooping; *heat, thirst* and *delirium*; cardiac palpitation. This remedy is specially indicated when the attack is due to great emotional excitement or exposure to extreme heat.

Hyoscyamus.—Dark red face and sparkling eyes; *violent delirium*; lascivious mania; epileptiform attacks; muscular twitchings; *great nervousness*; double vision; grating of the teeth. Acute attacks in which the nervous and mental phenomena predominate.

Stramonium.—This remedy is indicated in cases similar to those for which *Hyoscyamus* is recommended, the nervous excitement being extreme, and the delirium of the most active and furious character. The patient *laughs, sings* and *gesticulates* in rapid succession, or shows great *fright, terror* or *rage*. In milder cases, vertigo and temporary blindness are special indications.

Amyl nit.—Throbbing of the cerebral vessels, with sense of heat and fulness in the head; buzzing and throbbing in the ears; *protrusion of the eyes*, with flushing of the face; visible pulsations of the carotids; violent cardiac action. At the very beginning of active cerebral hyperæmia.

Bryonia.—Painful outward pressure in the forehead and temples; active cerebral circulation, attended with *bleeding of the nose*; muscular twitchings during sleep; face red and puffed; gastric disturbances and constipation.

Gelsemium.—Dull, pressive and stupefying headache, extend-

ing from os frontis to occiput; vertigo, dimness of vision and diplopia; drowsiness and mental confusion; *dull, aching pain in the nape of the neck, with disposition to throw the head backward*; great muscular prostration; *dropping of the upper eyelids*. Most useful in the passive form of cerebral congestion, especially in malarial cases.

Veratrum vir.—Fulness and sense of weight in the head, with vertigo, confusion of mind and loss of memory; *oppressed respiration*; labored action of the heart; *tingling and numbness in the limbs*. Passive congestions, especially such as result from alcoholic stimulants and malarial poisoning.

Opium.—Apoplectic cases, with *dark red and bloated face, slow pulse and difficult articulation*; great drowsiness, with confusion of mind, and sense of heaviness and pressure within the head; coldness of the hands and feet, with mumbling delirium. Suited to the passive and apoplectic forms, and also such as arise from fright or debauchery.

Apis mel.—Sense of fulness and heaviness of the head, especially in the occiput; burning and throbbing in the head, greatly aggravated by stooping; vertigo, with nausea; drowsiness, with inability to sleep, owing to extreme nervousness; redness and burning of the eyes and eyelids; sleep disturbed by oppressed breathing and unpleasant dreams. Most suitable in cases characterized by great cerebral depression.

Nux vomica.—Gastric derangement, with dulness and confusion of the head; sleeplessness during the latter part of the night; drowsiness, with a tendency to coma; symptoms aggravated by coffee, eating and exercise in the open air. Constipation, haemorrhoids and derangements of the stomach point to this remedy, especially in chronic cases caused by excessive mental labor, sedentary modes of life, overstimulation by alcohol, the abuse of tobacco, worry and loss of sleep.

Arnica.—Heat and burning in the head, with *coldness of the rest of the body*; throbbing in the forehead and temples, increased by stooping or exercise; tinnitus aurium; vertigo, attended with nausea, obscuration of sight or loss of consciousness; delirium. Chronic congestions, and also such as result from mechanical violence.

Phosphorus.—Heat and throbbing in the head, with vertigo, buzzing in the ears and heat in the vertex; *lightning-like pains in the head*; sense of weight in the forehead, increased by stooping. Chronic cases, and such as are due to mental strain or overwork.

Cuprum.—Violent convulsive movements, either general or local; *restless tossing about* and *constant uneasiness*; pulse full, quick and strong; eyes red and inflamed, looks wild, and speech delirious; excessive thirst. Cases resulting from suppressed eruptions or retrocedent exanthemata.

Cimicifuga.—Dull, heavy feeling in the head; pain in the temple and vertex, with a sensation of pressure; heat and fulness in the head, with throbbing and pressure; pain in and behind the eyes, also in the back of the head and neck; the brain feels too large for the skull; sensation as if the top of the head would fly off; severe pain over the right eye. Cerebral congestion, involving especially the base of the brain and complicated with spinal irritation.

Aurum.—Heat and roaring in the head; scintillations before the eyes; extreme melancholy, desire for death and *suicidal tendency*; symptoms aggravated by mental exertion.

Coffea.—Heat in the head and face, with flushing; bleeding of the nose; great nervousness and exaltation of the senses; hot head, red and glistening eyes and cold feet. Infantile cases occurring during the period of dentition, especially when associated with diarrhoea.

Lachnanthes.—Dull headache, with sensation of upward pressure in the vertex; vertigo, with feeling of heat and congestion in the chest; great outward pressure behind the eyes; burning sensation in the head, while the whole body feels cold; expansive feeling in the head, as if it was being split open.

Rhus tox.—Burning, throbbing pains in the head, with sense of fulness; red and burning, or pale and puffy face; *vertigo when lying down*; great restlessness, especially at night; wavering sensation in the brain; pains reappear after eating. Especially adapted to cases caused by prolonged exposure to extreme cold, or by standing in cold water.

Asclepias syr.—Headache, with vertigo, dulness and stu-

pidity; *sharp, stabbing pains, extending from one temple to the other*; severe headache, with quick, full pulse and nausea; feeling of constriction across the forehead; *scanty urine*. This remedy is particularly indicated in cases where the perspiration has been suddenly suppressed.

Pulsatilla.—Oppressive, beating headache, with confusion of mind; red and bloated face, with bright sparks before the eyes; vertigo, with tinnitus aurium; double vision, nausea and pallor of the face; *bitter taste in the mouth*; drowsiness during the day and sleeplessness at night; *scanty or suppressed menses*; symptoms worse in a warm room; ameliorated by pressure, or by going into the open air. Especially called for in cases caused by a sudden suppression of the menses, particularly in young girls.

Sulphur.—Rush of blood to the head, producing redness and heat of the face, vertigo, and a sense of fulness and pressure within the cranium, with violent throbbing; pale face, with coldness of the extremities. As an intercurrent remedy in chronic cases.

Auxiliary Treatment.—The removal of the cause is generally the first thing to be considered, for whenever it can be effected it will greatly benefit the patient, and in many cases accomplish a cure. Where the exciting causes cannot be entirely removed, they may be lessened, and their injurious effects greatly palliated. Thus, the passive form requires rest, both physical and mental; hence all excess in eating and drinking, all excitement or gratification of the animal appetites and passions, in short, every form of bodily and mental exertion, should be studiously avoided. The active form requires similar restrictions, except that the injunction as to rest need not, as a rule, be insisted on to so great an extent. The patient, however, if able to be about, should abstain from all severe muscular exertions, especially in a stooping posture. But moderate exercise in these cases is often of great benefit. Dr. Kershaw relates several cases which were greatly benefited by regular and judiciously taken exercise, such as walking, riding, etc., carefully regulated according to the strength and health of the patient.

Professor Preyer, of Jena, claims to withdraw an excess of blood from the brain by making his patient stand with one arm outstretched until the limb aches violently. By conducting the excess of blood to the arm in this way, the brain is relieved, and a cure speedily effected.

Cold to the head is often of great benefit in the active form of the disease, if systematically applied. When the hyperæmia is intense and the pupils very much contracted, ice and ice-water should be applied to the head and neck until the symptoms abate, which may not be under several days, or even weeks. I recently succeeded in curing a very severe case in this manner, in a patient over seventy years of age, and a hard drinker at that, the congestion continuing over a period of from six to eight weeks, more than four hundred pounds of ice being used! Of course, such heroic treatment is only suited to cases of the most active and intense form, with a very high temperature, bounding pulse and greatly contracted pupils. In mild cases it will be better and safer to use warm water instead of cold, as the evaporation from it not only produces a comfortable sense of coolness, but causes no depression, and is followed by no injurious reaction.

There are various agents known to possess the power of contracting the cerebral capillaries, such as *galvanism*, *ergot* and the *alkaline bromides*. These are sometimes useful as palliatives, and may be employed with benefit in cases where the homœopathically indicated remedies, from any cause, appear to be inadequate to the complete removal of the hyperæmic condition, which, however, will seldom be found to be the case.

The *constant galvanic current* should be applied by placing one sponge over the sympathetic nerve in the neck, and the other over the spine, opposite the seventh cervical vertebra. The current from eight or ten Smee's or Leclanché cells, acting not to exceed three or four minutes at any one time, will be sufficient for the purpose.

Ergot and the *bromides*, being allopathic remedies, require to be used in material doses. Hammond advises the former in drachm doses of the fluid extract, and the latter in twenty-grain doses, in solution, three times a day. I have seldom had

occasion to resort to either of these remedies in active cerebral congestion, but have employed the bromides with apparent benefit in a few stubborn cases, giving them in two or three-grain doses every hour.

Care should be taken in every case to keep the feet warm, the head elevated, the chamber cool, and the clothing about the chest and neck loose and comfortable. The diet should be light and easily digestible; and in all severe cases it should be entirely devoid of any stimulating quality. I have found nothing better, for this purpose, than a thin broth made of a bare knuckle of veal, and containing little more than water and gelatine.

CEREBRAL HÆMORRHAGE.

Synonyms.—Apoplectic Stroke, Cerebral Apoplexy, Apoplexia Sanguinia; *Fr.*, *Hemorrhagie Cérébrale Interstitielle*; *Ger.*, *Hirnschlag, Schlagfluss, Gehirn-apoplexie, Hirnblutung*.

Definition.—A rupture of a cerebral bloodvessel, and the consequent escape of blood into the substance, or into the ventricular cavities, of the brain.

Diagnosis.—The distinctive character of cerebral hæmorrhage is that of a brain lesion occurring suddenly. But as apoplexia sanguinia is but one form of the *apoplectic state*, it is important to distinguish it from the others, namely, the apoplectic variety of cerebral hyperæmia, embolism of cerebral arteries, alcoholic and uræmic intoxication, sunstroke and hæmorrhage into the cerebral membranes.

The distinctive features of cerebral congestion have already been given under the head of cerebral hyperæmia, which see.

Embolism of the cerebral arteries may commonly be distinguished from cerebral hæmorrhage by the fact that in embolism there are no prodromic symptoms, that the paralysis is usually on the right side, and that the disease is almost always associated with valvular disease of the heart.

The symptoms of alcoholic and uræmic intoxication sometimes closely resemble those of cerebral hæmorrhage, but the profound stupor of full inebriation can usually be satisfactorily determined by the breath, habits and general appearance of

the patient; while uræmic intoxication offers a sufficient guide to the judgment in the existence of kidney disease and the chemical and microscopical peculiarities of the urine.

The insensibility produced by sunstroke can be easily accounted for by a knowledge of the previous exposure of the patient to the direct rays of the sun, while the absence of one-sided paralysis clearly distinguishes it from cerebral haemorrhage.

Haemorrhage into the cerebral membranes may usually be distinguished from cerebral haemorrhage by the fact that it is seldom followed by hemiplegia, that violent headache is a characteristic symptom of it, that coma comes on gradually or not at all, and especially by the fact that its course is marked by frequent remissions.

Hysterical coma often closely resembles that of cerebral haemorrhage, but in these cases there are usually other evidences of the hysterical condition present, such as the superficial character of the symptoms, the unembarrassed state of the general circulation, the absence of stertor, the age of the patient, the hysterical history and constitution, etc.

Pathology.—MM. Charcot and Bouchard have conclusively shown that, in the great majority of cases of cerebral haemorrhage, the vascular rupture is due to the formation of *miliary aneurisms* upon the smaller branches of the cerebral arteries, in consequence of an inflammatory condition which results in atrophy of the middle coat, on which their strength chiefly depends. The cerebral bloodvessels are also sometimes greatly weakened by atheromatous degeneration, which is a common pathological condition in the aged, and is sometimes the only known cause of the rupture. Other conditions, likewise, doubtless favor the rupture, such as an increased tension of blood in the vessels of the brain; an unhealthy state of the blood, such as exists in typhus, scurvy, etc., rendering it unfit for the proper nourishment of the bloodvessels, cerebral softening, etc.

Clinical Experience.—*Aconite* and *Belladonna* are generally given to relieve the earlier and premonitory symptoms, the former being preferred when there is much arterial excite-

ment, and the latter when congestion is the most prominent symptom. *Phosphorus* not only retards calcareous degeneration, but nourishes the brain substance, thereby lessening the danger of vascular rupture, and is given whenever, from hereditary predisposition, or tendency to cerebral congestion, an attack of sanguineous apoplexy is apprehended. During the attack, and until sensibility returns, the chief reliance usually is upon *Opium*, aided, according to the state of the circulation, by *Aconite* and *Belladonna*. At a later period, *Arnica*, *Rhus tox.*, *Nux vom.* and similar remedies are usually resorted to, partly to promote the absorption of the clot, and partly to stimulate the nerve centres, and thus relieve the paralytic condition.

Therapeutic Indications.—*Phosphorus*.—Probably this is the most important remedy, so far as preventive treatment is concerned, for the reasons above stated. Hereditary predisposition to the disease, a weak condition of the nervous system, the existence of senile or scrofulous bronchitis, weak lungs, cough, night-sweats and loss of memory, all point to the early use of this remedy, especially in the aged, and more particularly if subject to transient attacks of cerebral congestion.

Aconite is another very important remedy, as well in the premonitory as in the inflammatory stages. Whenever the head is hot, the pulse full, hard and strong, and the patient complains of headache, thirst, numbness and formication, this remedy is especially indicated.

Belladonna should follow *Aconite*, both in the premonitory and initial stages of the disease, whenever the symptoms for which the latter is given fail to yield, or when the head becomes hot, the eyes red and bloodshot, the pupils contracted, the face flushed and the cerebral vessels throb with increased violence. Convulsive movements, when spontaneous, are an additional indication for this remedy.

Opium rivals all other remedies during the stage of insensibility or when the face is dusky red, puffed and a deep comatose state exists, with *stertorous respiration*, *slow, irregular breathing*, *dilated and insensible pupils*, face and head covered with cold sweat, dropping of the lower jaw and one-sided paralysis.

Baryta carb.—Sanguineous apoplexy of old people, especially

when accompanied with partial paralysis, the patient being unable to speak owing to *paralysis of the tongue*; anxiety, with trembling of the limbs, and an inability to maintain the body in an erect position; childish, fearful and forgetful. Specially suited to those addicted to the excessive use of strong drink.

Rhus tox.—This remedy may be given with advantage after the inflammatory symptoms subside, especially when there is a *loss of feeling as well as of motion*. Rheumatic pains in the unparalyzed side, especially if aggravated by damp weather, also point to the use of this remedy.

Arnica.—Paralysis of the *left side of the body*, with insensibility and stertorous breathing; muttering delirium, with involuntary discharges of faeces and urine; symptoms of shock in old people; also suitable for the middle-aged, possessed of strong, plethoric constitutions. Arnica stands high as an anti-paralytic remedy in these cases, owing to its power of promoting the absorption of the clot, or, rather, of the effused blood, whereby the clot is contracted and the paralysis correspondingly relieved.

Sanguinaria.—Attacks due to venous congestion; distension of the temporal veins; burning heat and redness of the face; burning of the ears; *paralysis of the right side*; bad odor of the breath and sputa; difficult respiration, with pain in the chest, and cough. Especially suited to cases complicated with senile bronchitis.

Nux vom.—Sanguineous apoplexy of high livers, professional men and those leading a sedentary life; stertorous breathing, stupefaction and paralysis; dropping of the lower maxilla; attacks preceded by premonitory symptoms, such as vertigo, headache, tinnitus aurium, etc., also for the premonitory symptoms themselves.

Pulsatilla.—Attacks attended by loss of consciousness and preceded by drowsiness, especially when occurring in women at the climacteric period, or when accompanied or preceded by an arrest or disturbance of the menstrual function; congested condition of the face, with difficult breathing and paralysis.

Lachesis.—Insensibility, with sopor or drowsiness; absence

of mind when conscious; congestion to the head, with blueness of the face; slow, heavy, wheezing respiration; full and hard, or weak and irregular pulse; paralysis, especially on the *left side*.

Laurocerasus.—Deep, quiet coma, more like natural sleep than usual in such cases; pulse scarcely perceptible; cold, clammy skin; palpitation of the heart; convulsions, with subsequent paralysis, including paralysis of the sphincters; deficient susceptibility to the action of other remedial agents; patient speechless even when conscious.

Sepia.—Attacks preceded by cerebral hyperæmia or by venous congestion; intermitting pulse, cold feet and palpitation of the heart; intense headache coming on suddenly after stoppage of the menses. Especially adapted to women at the climacteric period, and to men addicted to hard drinking and venery.

Auxiliary Treatment.—Inasmuch as, according to the old adage, "an ounce of prevention is worth a pound of cure," great care should be taken in all cases where, either from age and decrepitude, or from hereditary predisposition, there is reason to apprehend an attack of cerebral hæmorrhage, to guard against its occurrence by a timely administration of such remedies as will tend to improve the blood and strengthen the enfeebled capillaries of the brain, such as *Phosphorus*, *Nux vom.* and *Baryta*, and also to quiet the circulation and subdue any tendency to cerebral hyperæmia which may exist by such remedial measures as we have recommended under that head. (See the preceding section, and for fuller information on this important subject the reader may also consult with advantage the author's work on *Intracranial Diseases*, pp. 99-108.)

After the attack, and especially during the period of unconsciousness, the patient should be kept in such a position as will most favor a return of blood from the head. Thus the head and shoulders should be raised by pillows, the clothing loosened about the neck and chest, and free ventilation of the patient's room at all times secured. The paralyzed limbs should be wrapped in cotton batting, or kept warm by means of hot flannels, frictions, etc.; and the bowels should be relieved

from time to time by emollient or stimulating injections, as the exigency of the case may require. Attention should also be given to the bladder, and, if necessary, the catheter should be used daily until the patient is able to void his urine voluntarily.

The *diet* is such an important matter that during the early stages of the attack nothing more stimulating than gum water, barley or rice water, toast water and similar farinaceous drinks should be given ; but after the period of inflammatory danger is past and improvement commences, more nutritious substances may be allowed, such as animal broths, milk, soft-boiled eggs, etc., but the effects produced by administering such articles of nourishment as these should be carefully watched, and if, on strengthening the diet, the face becomes flushed, and headache and restlessness or increased stupor ensues, all such stimulating articles of diet should be at once withdrawn. If inflammation sets in around the clot, which is apt to occur about the ninth or tenth day of the seizure, the treatment for meningitis and encephalitis will be required.

No attempt should be made to overcome the paralysis until the period of inflammation is past and the acute symptoms have entirely disappeared. Measures may then be safely taken for the relief of the paralysis, and for the prevention of consecutive muscular contractions. One of the first measures to be employed for these purposes is *massage*, which should be administered from one to three times daily by an experienced masseur. Some benefit may also be obtained from friction with the flesh brush and salt water, or with the electric brush, which is still more stimulating. But the most efficient treatment of the sort is *galvanism* methodically applied. At first, the induced current is to be preferred, but it should be of sufficient strength to produce contraction or cause slight pain. It may be applied by means of wet sponges to the skin covering the muscles, or, if this proves ineffective, it may be applied directly to the nerves. Such cases as will not yield to the induced current, whether they be old or recent, should be treated with the primary interrupted current, the primary constant current not producing contractions. The same efficient agent

may be used to promote the restoration of sensibility, in cases in which the anaesthesia does not spontaneously disappear.

After the patient has so far recovered as to move about, moderate exercise in the open air, change of scenery, salt-water baths and a diversified but tranquil life are to be commended and, as far as possible, secured.

CEREBRAL THROMBOSIS.

Synonyms.—Thrombosis of Cerebral Arteries, Veins and Sinuses; *Fr.*, *Thrombose Cérébrale*; *Ger.*, *Thrombose Cerebralis, Hirnarterienversperrung, Thrombose der Hirnarterien*.

Definition.—An occlusion of cerebral arteries, veins or sinuses by the coagulation and deposition, *in situ*, of fibrin upon the internal coats, or within the lumen, of the vessels.

Diagnosis.—The diagnosis of cerebral thrombosis is often a matter of extreme difficulty. The disease may be distinguished, in a general way, from cerebral embolism and cerebral haemorrhage by the gradual manner of its development; but from cerebral haemorrhage, when, as is sometimes the case, the haemorrhage takes place gradually, it can only be certainly diagnosed by taking into consideration the predisposing causes, namely, pulmonary affections and valvular diseases of the heart. When there is valvular disease, the diagnosis between cerebral thrombosis and cerebral embolism may be satisfactorily made out by means of the following table:

Cerebral Thrombosis.	Cerebral Embolism.
Advanced age.	Youth.
Evidences of atheroma.	Absence of atheroma.
Fatty degeneration of heart.	Previous rheumatic attacks.
Slight attacks of paresis.	Decided paralysis.

Pathology.—Owing to the diseased condition of the blood-vessel its internal coat becomes roughened, which favors the deposition of fibrin at that point. The primary layer thus formed becomes gradually thickened by fresh accretions, until

finally it fills the whole caliber of the vessel and completely obstructs it. While the artery is undergoing occlusion the part of the brain to which it is distributed is rendered more or less anæmic, and when the vessel becomes entirely closed the anæmic parts undergo the process of softening—first, *red softening* (which is probably a state of passive hyperæmia, combined with oedema and haemorrhage), and afterwards, unless the collateral circulation is speedily and adequately established, *necro-biotic* or *yellow softening* quickly supervenes.

Clinical Experience.—As this disease, when fully developed, depends upon the presence of foreign matter lying beyond the reach of ordinary remedial agencies, little benefit has hitherto been derived from medical treatment; nor can much benefit be reasonably expected from such treatment in any case, except so far as it may be capable of retarding the progress of the disease, and in contributing to the relief of some of its most serious and distressing symptoms. How far the following plan, prescribed by Dr. Stiles, has proven efficacious I have no means of knowing, but that it will palliate such cases I have no doubt.

When the disease shows evidence of inflammatory action, or is recent, *Bellad.*, *Nux vom.*, *Mercur.*; where it is evidently due to atheromatous conditions of arteries, *Phosphor.*, *Phos. ac.*, *Anac.*, *Zincum*; for hemiplegia, *Nux vom.*, *Coccul.*, *Baryta carb.*, *Arnica*; for vertigo, *Iodine* (congestive); *Sulphur*, *Digit.* (cardiac); for sleeplessness, *Coffea*, *Hyosc.* or *Nux vom.*, and *Chamom.*, if the patient has been addicted to the use of coffee; *China*, if he has been a great tea drinker; for paralysis (general), *Phosphor.*, *Conium*, *Coccul.* (local), *Caustic.*, *Acon.*, *Ignat.*, *Bellad.*; for convulsions (simulating epilepsy), *Bellad.*, *Calc. carb.*, *Cuprum*, *Strychnine*; for emotional disturbances, *Ignat.*; headache (active), *Acon.*, *Bellad.*, *Bryon.*, *Nux vom.*, *Glonoin*; (passive), *Gelsem.*, *Opium*; for imbecility, *Arnica*, *Ambra*, *Selen.*, *Sepia*; or sensation of formication, *Secale*.

Therapeutic Indications.—These, so far as applicable to the disturbances caused by cerebral thrombosis, may be found under the respective heads of *cerebral anæmia*, *cerebral hyperæmia*, *cerebral haemorrhage*, and *encephalitis*, which see.

Auxiliary Treatment.—This consists for the most part (1) in the removal, so far as possible, of all debilitating causes and disturbances; (2) in aiding both the general and local circulation by such constitutional and other means as the exigencies of the case may require; and (3) in endeavoring to dissolve the fibrinous deposit by the administration of alkaline solvents.

Dr. B. W. Richardson, after citing a number of illustrative cases, formulates the following rules, among others, for the exhibition of *Ammonia* as a solvent of fibrinous concretions in the heart and bloodvessels:

1. The ammonia is best administered either in the form of the strong aqueous solution, or of the saturated alcoholic solution. More than five minims at a time cannot easily be swallowed. The best menstruum for the ammonia is milk, and if the milk be chilled by ice, the patient takes the mixture with great facility.

2. The ammonia must be relied upon exclusively. Sedatives and stimulants of all kinds are to be avoided as fraught with danger. Wines and spirits are most injurious; they produce a danger of movement of the fibrinous mass; they excite and, in time, exhaust the heart.

3. The diet should be, as nearly as possible, of pure milk, with an occasional change to gravy soup or minced codfish, with bread or toast. Other solid substances do not digest readily; they create flatulency, and cause a restless movement of the body, which is detrimental.

4. With the medicinal and dietetic treatment thus enjoined there must be combined the most perfect rest of the body in one position. The secret of success consists in producing solution of the obstructing mass while it lies sufficiently out of the course of the circulation. If it loosen from its hold while it remains semi-solid, however small it may be, it will be a source of additional danger.

5. Together with this physical rest, every mental comfort must be supplied. The patient must be harassed with no unnecessary fears, agitated by no unnecessary comments. Much of the success of the treatment depends on the gentle firmness with which the practitioner enforces that the greatest

advantage is secured by absolute repose of the mind as well as the body.

6. When the secondary changes indicate the solution and distribution of the fibrin, the administration of the ammonia is not to be immediately withdrawn. The alkali is still as important, under these circumstances, as in those which precede them.

7. The conditions warranting the withdrawal of the solvent are: relief of venous engorgement; normal return of pulse and temperature, and restored mental and physical power; in other words, a complete restoration of all the normal powers and functions. When these favorable conditions exist, it is fair to infer that no obstruction remains in the circulatory canals, and that the ammonia may be safely withdrawn.

But inasmuch as the ammonia, however far it may, with reason, be carried, does no injury that is not quickly recovered from, there exists no cause for hurry in withdrawing it. It may, therefore, be continued in less frequent doses for a few days after every danger appears to have passed away.

The above directions have been formulated with reference, more especially, to embolism and thrombosis of the larger circulatory vessels, but they apply equally well to the same conditions of the capillary vessels of the brain, except that, in the latter case, the injunctions as to absolute rest need not be insisted on to so great an extent. Nevertheless, it is important even in these cases that the complete solution of the fibrinous obstructions should take place *in situ*, unless the general health of the patient should materially suffer from the confinement; hence it is best to have them rigidly observed in every case of cerebral vascular obstruction in which the treatment may be tried.

CEREBRAL EMBOLISM.

Synonyms.—Embolism of the Cerebral Arteries and Capillaries; *Fr.*, *Embolie Cérébrale*; *Ger.*, *Embolie Cerebralis*, *Hirnarterienversperrung*, *Embolie der Hirnarterien*.

Definition.—The obstruction of arteries or capillaries of the brain by solid particles of matter formed in other parts of

the body, and carried along in the course of the circulation to points where they have become lodged.

Diagnosis.—Occlusion of the left middle cerebral artery causes right hemiplegia with aphasia, while obstruction of the right middle cerebral produces left hemiplegia without aphasia. Embolism of the ophthalmic artery gives rise to sudden amaurosis; and sudden plugging of the basilar artery produces vomiting. These diagnostic points are sufficient, in connection with the other symptoms mentioned below, to clear up the majority of cases of cerebral embolism; but when the symptoms of apoplexy are present it may not be possible at first to distinguish the disease with certainty from cerebral haemorrhage. When, however, the paralysis vanishes suddenly, we know that it was not caused by cerebral haemorrhage; and if recovery takes place within two or three days after the attack, the latter can only be referred to an embolus. Moreover, there are no premonitory symptoms in embolus; the disease occurs irrespective of age; the paralysis, which is usually on the right side, is generally combined with aphasia; and the disease is almost always associated with valvular disease of the heart, or a preceding attack of endocarditis. The differential diagnosis between cerebral embolism and cerebral thrombosis may be found under the latter head.

Pathology.—Many competent observers have shown that the cerebral blood vessels may be obstructed by fibrinous concretions derived from the heart or large vessels; that this obstruction produces anaemia of those portions of the brain to which the affected artery is distributed; and that unless the obstruction is quickly removed, or the collateral circulation adequately and speedily established, softening of the brain substance is sure to follow.

Anomalous cases of cerebral embolism sometimes occur, in which general fever takes the place of hemiplegia or other local paralysis. These cases are characterized by high fever, with delirium, and without any, or scarcely any, definite paralysis or aphasia. The pathological condition consists in the distribution through the brain of embolic dust, so fine as to traverse without hindrance the larger arteries of the base and

substance of the brain, to be finally arrested in the minute channels of the pia mater.

Clinical Experience.—The only clinical experience worth mentioning is that referred to under the head of *thrombosis*, which see.

Therapeutic Indications.—As these have to do with *effects* rather than *causes*, they will be found given in detail under their appropriate headings. See *cerebral anæmia*, *hyperæmia*, *hæmorrhage* and *softening*.

Auxiliary Treatment.—This is necessarily limited to such measures as are calculated to favor the establishment of the collateral circulation, to wit: lowering or raising the head, according as the cerebral circulation is more or less embarrassed; promoting the general circulation by friction with the flesh brush, wrapping the body and limbs in warm blankets, cotton batting, etc., in case the patient is somnolent and the bodily temperature much reduced; and, finally, by a cautious endeavor to dissolve away the fibrinous concretions by the “ammonia” treatment already described. (See p. 29.)

ENCEPHALITIS.

Synonyms.—Suppurative Inflammation of the Brain, Cerebritis; Fr., *Inflammation de l'Encephale*; Ger., *Enkephalenzindung*;—Cerebral Abscess; Fr., *Abcès Cérébrale*, *Abcès de l'Encephale*; Ger., *Eiterbeule des Gehirns*, *Hirngeschwür*.

Definition.—Partial inflammation of the brain substance, usually complicated with meningitis, and tending to suppuration.

Diagnosis.—The diseases for which encephalitis is liable to be mistaken are: acute cerebral meningitis, cerebral hæmorrhage, cerebral tumors, and the disease called general paralysis. In acute meningitis the fever is much higher, the convulsive movements more general, the headache more severe, and the delirium more marked and constant. In cerebral hæmorrhage the symptoms generally become more and more ameliorated as the disease progresses, whereas in encephalitis they become progressively more pronounced. The symptoms which charac-

terize general paralysis, and also those which attend the development of cerebral abscesses, closely resemble those which accompany the growth of cerebral tumors, and can, as a rule, only be distinguished by the history of the case and the fact that encephalitis is usually of shorter duration than general paralysis, and is not marked by the "mania de grandeur" peculiar to the latter disease.

Pathology.—The tendency to suppuration is so great in this disease that more or less softening of the brain substance is always found after death, generally in circumscribed patches, which usually terminate in one or more abscesses, involving not only the gray matter, in which the inflammatory process usually commences, but also the white substance of the cerebrum, the basal ganglia, and, in some cases, the cerebellum.

In acute cases, the abscess, being surrounded by no limiting capsule, encroaches more and more upon the adjacent tissues, and may ultimately reach the surface of the brain, or break through into the lateral ventricles. When the inflammation is due to injury or caries of the cranial bones, it is no uncommon thing for it to escape, sooner or later, through the ear or nose. On the other hand, when the inflammatory process is more chronic, the abscess is surrounded by a membranous capsule composed of connective tissue, and if large will give rise to symptoms of compression. There is no hope of recovery after the disease has passed the stage of red softening.

Clinical Experience.—Our clinical experience in this disease is so mixed up with that of acute meningitis, with which it is commonly associated, that no reliable distinction can be made between them. This, however, is of but little consequence in a practical point of view, as the treatment of suppurative encephalitis is, so far as our present experience goes, altogether palliative. It is right to add, however, that Kafka appears to have treated a case successfully with *Arsenicum*, "even when cerebral softening, with progressive increase of the morbid phenomena, coexisted side by side with the symptoms of cerebral hyperæmia," the remedy having been employed after the hyperæmic condition had been relieved by *Glonoïn* and *Belladonna*. *Kali brom.* and *Cannabis ind.* have proved bene-

ficial in some cases by diminishing the irritability of the nervous system.

Therapeutic Indications.—Considering, as we do, that the curative stage of this disease is limited to the initial or hyperæmic period, to detail the therapeutic indications would be but to repeat what is said under that head regarding *cerebral hyperæmia* and *meningitis*. We will simply add that *Iodine* and *Plumbum* have been recommended, chiefly on theoretical grounds, the former for its supposed power to control suppurative inflammation, and the latter for its anti-paralytic action; *Mercurius iod.* in syphilitic and scrofulous subjects, especially when there is a history of chronic otorrhœa, enlarged tonsils or rheumatism, with an aggravation of the symptoms at night or from a change of weather; *Pulsatilla*, when the disease follows the suppression of an eruption or of a chronic discharge from the ear; *Silicea*, when an abscess is supposed to have formed; and *Zincum* in the later stages, when there is great depression of both mind and body.

Auxiliary Treatment.—Hygienic measures, if instituted sufficiently early, may be of service in warding off an attack. Hence, in all suspicious cases, especially if the patient is weak, scrofulous or ill-nourished, a good nutritious diet should be recommended, and, where vertigo does not prevent, the patient should exercise freely in the open air, live in a mild, equable climate, and, if practicable, occasionally take an ocean voyage—all of which will strongly tend, by invigorating the system, to remedy any threatened invasion of the disease.

CEREBRAL SOFTENING.

Synonyms.—Softening of the Brain; *Fr.*, *Ramollissement Cérébrale*; *Ger.*, *Erweichung des Gehirns*.

Definition.—A necro-biotic process, involving brain tissue, caused by defective nutrition, depending in most cases on vascular obstruction and attended by diminished consistence.

Pathology.—When obstruction in any of the cerebral blood-vessels takes place on the far side of the circle of Willis, necrobiosis is quickly established, because there is no free vascular

connection by which a collateral circulation can be speedily effected. Hence the parts supplied by the obstructed vessels at once become anaemic, and, nutrition being cut off, a condition known as *red softening*, *i.e.*, hyperæmia, with oedematous swelling and haemorrhage, soon supervenes. Subsequently, the color, which is due entirely to the extravasation of red corpuscles, gradually fades, and in a few weeks the affected tissues present the appearance of *yellow softening*. In case the patient survives a sufficient length of time *white softening* is produced, the cerebral matter changing into milk-like emulsion, part of which eventually becomes absorbed, leaving in some cases a cyst partially filled with liquid, resembling the cysts found after ordinary attacks of cerebral haemorrhage.

There is another condition, called *primary yellow softening*, in which the parts immediately undergo fatty degeneration, without the previous changes above mentioned. This is supposed to depend upon a weakened state of the heart, the blood coagulating so quickly in the sphere of the obliterated vessel as to prevent any reflux of blood through the corresponding vein.

Clinical Experience.—*Belladonna*, *Kali phos.*, *Rhus tox.*, *Glooin*, *Picric ac.* and *Arsenicum* have all been given with apparent success in this disease—I say, with *apparent* success, because I do not believe it to be within the power of any remedy to effect a cure after the stage of red softening has passed, even though the vascular obstruction should have ceased. Up to and including this stage, however, these remedies have given good results; indeed, more or less amelioration of the symptoms has been produced by them at a comparatively late period in the disease. So far as the pathological condition of the brain is concerned, *Arsenicum* and *Picric ac.* are eminently homœopathic to it, and if it be possible to set up a curative action in the affected tissues at this stage of the disease, these are the remedies most likely to prove successful.

Therapeutic Indications.—*Picric ac.*—*Necro-biotic softening of nervous tissue*; intense cerebral hyperæmia; bleeding of the nose; *cerebral softening*; extremities feel heavy, cold and very weak; speedy exhaustion from slight exertion; general state of *asthenia*.

Arsenicum.—*Necro-biotic softening*; headache, vertigo, wandering pains, impaired sensibility of the limbs, delirium, coma, lassitude, nervous debility, cramps, trembling, paralysis.

Strychnia.—Cerebral softening, accompanied by hemiplegia, or by general paralysis.

Zincum phos.—Severe headache, dizziness, sleeplessness, loss of memory, cardiac weakness; general debility.

Belladonna.—Fixed headache, with drowsiness, vertigo and loss of memory; convulsions; local paralysis.

Abrotanum.—Gloomy, despondent, irritable, ill-natured; *brain easily fatigued*; head weak; face pale and wrinkled; indolent and averse to physical exercise.

Auxiliary Treatment.—As embolism and thrombosis are the two principal causes of cerebral softening, the auxiliary, no less than the special, treatment recommended for those conditions applies with equal force to this disease, and need not therefore be repeated. The same is true of the treatment recommended for cerebral hyperæmia and haemorrhage, conditions which belong especially to the curative stage of this affection. Indeed, it is only by directing the treatment in this way against individual symptoms and conditions that we can stand any chance of curing, or even of greatly ameliorating, the cerebral disorder.

From what has been said regarding the ætiology and pathology of cerebral softening, it follows that any influence or treatment calculated to lower the tone of the system, no matter what it may be, must have a prejudicial effect, and consequently that the early adoption and steady use of supporting measures are of the highest importance. If the general circulation is much embarrassed, or if the patient is much reduced in strength or his mind greatly impaired, he should be kept in a quiet, recumbent position, the body and extremities kept warm by artificial heat, friction, etc., and all intellectual exertion and every form of mental and bodily excitement should be carefully avoided.

APHASIA.

Synonyms.—Loss of the Faculty of Speech, Aphemia, Alalia; *Fr*, *Aphasie*; *Ger.*, *Sprachlähmung, Aphasie*.

Definition.—A disease of the brain attended by a loss of memory of words, or of the ability to express them in written or articulate language.

Diagnosis.—This disease is easily recognized, as there is no other affection with which it is liable to be confounded. When due to cerebral haemorrhage, thrombosis, embolism, abscess or tumor, it is almost invariably associated with right-sided hemiplegia; but in simple cases, such as are caused by mere functional derangement, irritation, œdema, congestion, etc., there is little or no attending paralysis, and the prognosis is far more favorable.

Pathology.—Broca first made the discovery that the cerebral centre for articulate language is in the third left frontal convolution of the brain, along the course of the middle cerebral artery in the island of Reil; and that irritation or injury of this portion of the cerebrum causes aphasia. This discovery has since been abundantly confirmed by numerous post-mortem examinations, from which it appears that the disease is usually due, in fatal cases, to the blocking up of the left middle cerebral artery by an embolus or thrombus.

Clinical Experience.—Notwithstanding the fact that aphasia is often due to occlusion of the middle cerebral artery, it is a singular fact that many cases of the disease have yielded to homœopathic treatment; from which we infer that, contrary to the usual belief, aphasia results far more frequently from irritation or congestion than from organic disease. Decided improvement and, in many cases, satisfactory cures have been reported from the use of *Belladonna*, *Arnica*, *Stramonium*, *Phosphorus*, *Glonoin*, *Baryta*, *Lachesis*, *Kali brom.*, *Causticum*, *Lycopodium*, *Zincum*, *Conium* and *Bothrops*.

Therapeutic Indications.—*Lycopodium*.—Makes many mistakes in reading and writing; uses wrong words, and words which do not express what he wants to say; mixes up letters and syllables, and leaves out part of them; is very forgetful, and troubled by confusion of thought.

Stramonium.—Talks at random, using a perfect *diarrhœa of words* without rational meaning; confusion of intellect, with great weariness of mind; congestion of the brain, with contracted pupils, and almost complete blindness; stuttering; *paralysis of the organs of speech*; loss of memory; unconsciousness; extreme insensibility of all the senses.

Conium.—Very forgetful, especially of words; cannot understand what he is reading; uses wrong words in speaking; loss of memory, with great confusion of mind; *entire loss of the power of speech*; hesitating and difficult speech; somnolence, amounting to stupefaction.

Arnica.—Aphasic symptoms following an attack of cerebral haemorrhage; stertorous breathing; bruised, aching feeling in the brain; paralysis.

Glonoin.—Loss of memory for words and of the power of expressing them; acute congestion of the brain; mental torpor.

Baryta carb.—Loss of memory for words and names; cannot recollect the names of persons or things; great dulness of mind and of the senses.

Lachesis.—Dulness of comprehension; does not understand what he reads or hears; loses the sense of words; makes mistakes in writing; confuses numbers and dates; absence of thought, with great weakness of memory.

Kali iod.—In syphilitic and epileptic cases; also when the aphasic symptoms have been preceded by an attack of cerebral haemorrhage.

Phosphorus.—In cases where the symptoms preceding the attack show general depression of the nervous system, as manifested by weakness, mental torpor, restlessness and indecision.

Causticum.—Great weakness of memory; very forgetful of words and names; head feels heavy and dull; absentmindedness; congestion of the brain; inability to think clearly on any subject.

Colchicum.—Inability to pronounce words correctly; loss of memory for words; leaves out words and syllables in writing; confusion of thought.

Chamomilla.—Omits words in speaking and writing; is very forgetful and absentminded; great dulness of comprehension; mental vacuity; stammering hesitancy of speech.

There are many other remedies the pathogeneses of which contain *aphasic symptoms*, among which are: Olean., Thuja, Anac., Graph., Ign., Natr. mur., China, Rhodod., Crocus, Arg. nit., Hepar sulph., Merc., Puls., Nux vom., Nux mosch.; others, like Opium, *Œnan.*, Bell., are eminently suited to *apoplectic conditions*; Hyosc., Bovis., Phos. ac., Cocc., Alum., Plat., when *absentminded and forgetful*; Sulph. ac., Amm. carb., Sepia, Bov., *awkwardness of expression*.

Auxiliary Treatment.—Prof. Charcot has attempted to show that the power to pronounce or to write words depends upon an impression made upon the ear or eye, and therefore that every aphasia or agraphia is a word amnesia situated in some central ganglion of the brain, instead of being confined, as is generally thought, to Broca's convolution. If Charcot's doctrine is correct, then much may be done in chronic cases towards recovering the faculty of speech, by educating, so to speak, the corresponding sense centre. We know that something like this has already been accomplished in a number of instances, but it has generally been referred to the "uneducated" third frontal convolution of the opposite side of the brain, namely, the right. May it not be possible, in these cases, by careful practice every day, to so educate the previously unused sense centres presiding over the faculty of speech, as to greatly favor a cure, and in time, perhaps, overcome the difficulty altogether?

CEREBRAL HYPERTROPHY.

Synonyms.—Hypertrophy of the Brain, Hyperplasia of the Cerebral Neuroglia, Hypertrophy Cerebri; *Fr.*, *Hypertrophie Cérébrale*, *Hypertrophie du Cerveau*; *Ger.*, *Hypertrophie des Gehirns*, *Gehirn-hypertrophie*.

Definition.—An overgrowth or hypertrophy, not of the nervous tissue, but of the neuroglia, or interstitial connective tissue of the brain.

Diagnosis.—In congenital cases, owing to the enlargement of the head, the disease is liable to be mistaken for chronic hydrocephalus; but children affected with cerebral hyper-

trophy are mentally brighter and more precocious than usual, while the subjects of hydrocephalus are unusually dull and stupid. In other cases the diagnosis is more or less uncertain, but when the enlargement is attended with frequent attacks resembling epilepsy, its existence is highly probable.

Pathology.—On exposing the surface of the brain *in situ*, it immediately expands so as to overlap the bones of the cranium; but a careful examination shows that while there is no undue amount of cerebral matter present, there is an excessive development of the neuroglia, rendering the brain heavier, firmer and more elastic than the normal organ.

Clinical Experience.—It is not certain that the disease has ever been materially benefited by medical treatment. *Calcarea carb.*, *Phosphorus*, *Kali iod.*, and a few other remedies have been recommended, but only, I believe, on theoretical grounds.

Therapeutic Indications.—These pertain, almost exclusively, to the remedies usually employed in *cerebral hyperæmia*, *convulsions*, *epilepsy* and *cerebral paralysis*, and will therefore be found under those headings.

Auxiliary Treatment.—The most important accessory treatment in these cases consists in improving the general health, guarding against exposure to all injurious influences, relieving cerebral congestion when present, and abstaining entirely from the use of alcoholic stimulants.

CEREBRAL ATROPHY.

Synonyms.—Atrophy of the Brain, *Atrophie Cerebri*, *Dif fused Cerebral Sclerosis*; *Fr.*, *Atrophie Cérébrale*, *Atrophie du Cerveau*; *Ger.*, *Atrophie des Gehirns*, *Gehirn-atrophie*.

Definition.—A shrinkage or wasting of the brain, with or without attending degenerative changes.

Diagnosis.—*Congenital cases* are, as a rule, easily recognizable, as they constitute various grades of idiocy; but *partial cerebral atrophy*, which is usually due to local lesions, such as haemorrhage, softening and encephalitis, and *general cerebral atrophy*, which occurs mostly in the aged, and is attended with

a gradual loss of cerebral power, can only be conjecturally determined during life, and that most satisfactorily by the history of the case.

Pathology.—In simple, that is to say, in primary or uncomplicated cases, the brain is simply diminished in volume, owing to a contraction or shrinkage of its constituent elements, the cerebral cells, nerve tubes and arteries being all more or less contracted.

In the secondary variety, the neuroglia, or connective tissue element, becomes atrophied or sclerosed, producing a shrinkage of the convolutions, so that in some places they are widely separated; the ventricles and subarachnoid space contain a large amount of serum; and in some cases portions of the brain tissue undergo softening, apparently from inflammatory action, as the membranes are thickened and opaque.

Clinical Experience.—This has reference exclusively to the physical, mental and nervous weakness experienced in these cases, as the atrophy itself cannot, of course, be remedied. The different salts of *Baryta* appear to have ameliorated the symptoms to a greater degree than any other remedies which have been tried.

Therapeutic Indications.—These are such as pertain to the various lesions associated with the disease and their characteristic symptoms. As they may possibly be of some service in suggesting palliative treatment in certain cases, the reader will do well to consult the indications given under the several heads of *cerebral haemorrhage*, *encephalitis*, *cerebral paralysis*, *convulsions* and *epilepsy*.

Auxiliary Treatment.—It is claimed that *galvanism* has been employed with occasional benefit in these cases, by promoting the nutrition of the atrophied cells. I have myself seen the paralysis diminish, the contractions relax, the mind improve and the wasted limbs gradually increase in size and strength under its stimulating influence.

Both the induced and primary currents may be required, the interrupted secondary current being best for the paralysis, and the constant current for the relaxation of contractions. Ten Leclanché cells will generally furnish a current of suffi-

cient intensity, the sponges being applied just behind the ears every second or third day, for a period not exceeding four or five minutes at one sitting.

Such hygienic measures should be adopted as are best calculated to improve the general health of the patient, since whatever improves the health also improves nutrition.

MULTIPLE CEREBRAL SCLEROSIS.

Synonyms.—Primary Multiple Sclerosis, Disseminated, Insular, Multilocular, or Idiopathic Cerebral Sclerosis; *Fr.*, *Sclerose en Plaques Disséminées*; *Ger.*, *Multiple Sklerose des Gehirns*.

Definition.—A cerebral lesion, consisting of plates or nodules of sclerosed tissue scattered throughout the substance of the brain.

Diagnosis.—Primary multiple sclerosis is liable to be mistaken for *paralysis agitans*; but in the latter disease there are no head symptoms, no muscular incoördination, no inability to trace a straight line with the dynamograph, no muscular anaesthesia, no abnormal states of sensibility, and is more apt to occur before than after fifty years of age. Secondary or ascending multiple sclerosis may generally be distinguished by the fact that the tremor precedes the paralysis, and also by the fact that the trembling is associated with voluntary as well as with involuntary muscular movements. *Chorea* may be distinguished from multiple sclerosis, not only by the history of the case, but by the facts that it usually occurs in young people, has no head symptoms, nor any actual tremor, the disorderly movements being simply more marked degrees of incoördination, which render the movements more irregular and pronounced.

Pathology.—The patches of sclerosed tissue are not confined to the hemispheres, though the cerebrum is their usual seat; they are occasionally found at the same time in the medulla, the pons and the cerebellum. Whether these cases are really different, as *Hammond* and others contend, from those in which the spinal cord is also implicated, is by no means cer-

tain. We know that multiple sclerosis is progressive, and we also know that in many cases the spinal form is secondary to that of the brain; but it does not follow that it is always so, nor that the disease, in such cases, is always an independent affection. What appears to be established is that, when confined to the encephalen, it gives rise to symptoms sufficiently characteristic to entitle it to be regarded as a distinct disease.

Clinical Experience.—*Argentum nit.* and *Oxalic ac.* stand at the head of the list in the treatment of this disease. Good results have also been obtained from *Plumbum*, *Baryta*, *Zincum*, *Tarantula*, *Phosphorus*, *Sulphur* and *Rhus tox.*

Therapeutic Indications.—*Oxalic ac.*—Lancinating pains like electric flashes in different parts of the body; electric-like pains in the forehead and vertex; sclerosis of nerve-tissue; tremor of the limbs; numbness of the fingers and toes.

Argentum nit.—Sharp, darting pains in the head, body and limbs; paralytic weakness in the back and limbs; trembling of the limbs; sensation of an epileptic aura; tremor increased by emotional excitement; tingling, followed by numbness in the hands and feet.

Plumbum.—Tearing, shooting pains from occiput to forehead; paralytic weakness of the extremities, most marked upon the right side; atrophy of the muscular tissue, especially when arising from sclerosis of the cerebro-spinal system; trembling of the limbs; excessive pains in the limbs.

Baryta carb.—Trembling of the hands and limbs, especially in old people; great bodily and mental weakness; facial paralysis; tremor of the feet when standing; arms heavy and tremulous; numbness and tingling in the fingers; shooting pains deep in the brain.

Zincum oxyd.—Jerking and trembling of the limbs; remarkable sinking of strength; paralytic weakness of the limbs, which tremble violently; tingling numbness in the limbs; painful tension in the muscles when in action.

Tarantula.—Chorea-like movements in the limbs; extreme restlessness; numbness of the trunk and limbs; paralysis.

Phosphorus.—Cerebral paralysis; tearing pains in the forehead and temples; numbness and formication in the limbs;

tremor of the hands; great restlessness and weakness; sensation as if completely paralyzed.

Sulphur.—*Tremor of the hands; unsteady gait; tearing pains through the head, body and limbs; great debility and trembling; numbness and formication.*

Rhus tox.—*Cerebral paralysis; trembling of the limbs; twitching of individual muscles; numbness, both general and local; wavering sensation in the brain, especially when in motion; lacerating pains in the head, especially when stooping; aggravation of the symptoms during damp weather or just before a storm.*

Consult, also, the indications given under the head of *cerebral paralysis*, where a number of other remedies, of greater or less value in this disease, may be found.

Auxiliary Treatment.—What is said under this heading concerning *cerebral atrophy* applies with equal force to multiple sclerosis. This is especially true regarding *galvanism*, and yet it cannot be doubted that, as a rule, electricity, in the indiscriminate way in which it is frequently used, has done almost as much harm as good. Overstimulation of any organ, especially when its functional activity is impaired by organic disease, is always more or less harmful, and this is emphatically true of the brain. Extreme care, therefore, should be taken whenever this potent remedy is employed in multiple cerebral sclerosis.

ATHETOSIS.

Synonyms.—Hammond's Athetosis; *Fr.*, *Athetose*; *Ger.*, *Athetose*.

Definition.—A condition characterized by a slow, steady movement of the fingers and toes, and by an inability to retain them in any one position.

Diagnosis.—The disease is liable to be mistaken for post-hemiplegic chorea; but the movements in this variety of chorea are quick, irregular, jerky and variable, while in athetosis they are slow, systematic and uniform.

Pathology.—By some, athetosis is regarded as a symptom rather than a disease, as the cases so far observed are mostly

found to be associated with some other nervous affection, such as hemiplegia, chorea and cerebral embolism; but as these all depend upon brain lesions, and, moreover, as bilateral atrophy often occurs in idiotic children, the affection in question is, I think, justly entitled to be regarded as a distinct disease. Its seat appears to be chiefly in, and just exterior to, the central cerebral ganglia—the corpus strictum and optic thalamus.

Clinical Experience.—*Cannabis ind.*, *Arsenicum* and *Agaricus* have been credited with curative powers over this disease, and from its resemblance, in some cases, to chorea, it is not improbable that, when the central ganglia of the brain are in a state of irritation simply, these remedies may prove effective.

Therapeutic Indications.—The cerebral symptoms in this disease being similar to those given under *cerebral hæmorrhage*, *chorea*, *epilepsy*, *cerebral embolism* and *paralysis*, the appropriate therapeutic indications may be found under those headings.

Auxiliary Treatment.—Everything calculated to lessen irritation and build up the system is likely to be of service; hence good nutritious food and an abundance of fresh air are of prime importance. Where the intellect is impaired, as in the case of idiotic children, moral treatment may be necessary. Most patients in this condition have strong imitative faculties, and these may often be turned to good account.

The *primary galvanic current* is reported to have been successful in stopping the movements after several months' continuous treatment. The positive pole may be placed over the spine or brachial plexus, and the negative on the affected muscles.

CEREBRAL SYPHILIS.

Synonyms.—Syphilitic Disease of the Brain, Cerebral Syphiloma, Gumma Syphiliticum Cerebri; *Fr.*, *Syphilis du Cerveau*; *Ger.*, *Hirnlustseuche*, *Syphilitische Gehirn-Erkrankung*.

Definition.—Specific lesions of the brain and its membranes, congestive, vascular and gummatous, due to secondary and tertiary syphilis, especially the latter.

Diagnosis.—First in the order of importance is the history of the case, which is often sufficient of itself to clear

up the diagnosis; next, as pointed out by Brown-Séquard, the disorderly grouping of nervous phenomena should lead us to interrogate syphilis as a cause, as, for example, paralysis of some muscle of the eye and paraplegia, or paralysis of one hand and the other foot, etc. Age is also of great diagnostic importance, as paralysis occurring in youthful persons is, in the great majority of cases, of syphilitic origin. Violent paroxysmal headache is another characteristic symptom of the disease; there is no form of headache so intense as that which results from syphilitoma of the dura mater.

In case the patient has no clear syphilitic history, the difference, which is often quite marked, between the real and apparent age, the facial expression, and especially the ophthalmoscopic symptoms are usually sufficient to establish the diagnosis beyond a doubt. The most reliable ophthalmoscopic symptoms are: swelling, hyperæmia and œdema of the papilla, varicosity of the veins, and a peculiar form of neuro-retinitis and choroiditis known as syphilitic.

Pathology.—The essential, gross pathological features of cerebral syphilis, according to Dr. Dowse, include (a) inflammatory thickening of the membranes, which may originate in the lining membrane of the osseous system with which the nervous structures come into contact; (b) invasions of the neuroglia by a diffuse form of gummatous infiltration, which may be the result, primarily, of disease of the circulatory system; and (c) the appearance of syphilitomatous masses, usually located in the upper convolutions of the anterior lobes, and almost invariably at the cortex, closely united to the membranes, extending into the surrounding tissue, which is generally softened, hypervascular and of a faint yellow color; the nerve cells and vessels giving evidence, under the microscope, of degenerations resulting from vascular obstruction.

Clinical Experience.—The cardinal treatment for cerebral syphilis, as for syphilitic diseases generally, is *Mercurius* and *Kali iod.*, in *large doses*. It is no use to speculate as to their homœopathicity, or anything of that sort; the fact stands out prominently in the experience of every school that the best and most reliable remedies for syphilitic affections, whatever

may be their seat, character, form or history, are large and frequently repeated doses of these two remedies. It is useless, therefore, and often worse than useless, to waste time in seeking other remedies for this disease in any given case *until these have been fairly tried and failed*. If experience is worth anything as a guide to treatment, we have it here.

Therapeutic Indications.—*Mercurius*.—This is our sheet-anchor in the secondary forms of cerebral syphilis, that is, when associated, as is sometimes the case, with syphilitic exanthems, or other varieties of *secondary syphilitic manifestations*; mental and bodily anguish, with great restlessness and complete insomnia; pain deep in the head, setting the patient almost crazy; wishes he was dead.

Kali iod.—Best and most reliable remedy for the *tertiary form of the disease*, or when there are no other symptoms of the disease present than what is manifested in and by the nervous system; also in cases where mercury has been given injudiciously, or without curative effect; *irresistible desire to go into the open air*; torturing feeling of anguish, preventing sleep.

Aurum.—After abuse of mercury and iodide of potassium; deep, tearing pains in the head; pains pressing from above downward and from within outward; great mental depression, with suicidal tendency.

Cinnabaris.—Most useful where there is a *scrofulous state of the system coëxisting*; also when complicated with *scrofulosis and previous mercurialization combined*.

Berberis.—Tertiary form of the disease; tearing pains in the whole head, slightly ameliorated by going into the open air; *head feels swollen and bloated; disposition to weep*.

Silicea.—Cases complicated with *scrofula*; *head feels as if it was teeming with living things*; pains much aggravated at night; swelling of the superficial glands.

Consult, also, the following remedies: *Nitric ac.*, *Lycopodium*, *Phytolacca*, *Stillingia*, *Kali bich.*, *Mezereum*, *Corydalis*, *Arsenicum iod.*, *Mercurius nitrosus* and *corrosivus*, *Staphisagria*, *Hecla lava*, *Argentum nit.*, *Sarsaparilla*.

Auxiliary Treatment.—This consists chiefly in endeavoring to palliate the symptoms caused by *cerebral hyperæmia* and *cerebral tumors*, which see.

CEREBRAL TUMORS.

Synonyms.—Tumors of the Brain; *Fr.*, *Tumeurs du Cerveau*; *Ger.*, *Hirngeschwülste*, *Geschwülste des Gehirns*.

Definition.—A swelling in the brain caused by some form of new growth.

Diagnosis.—Cerebral tumors are sometimes of easy recognition; at others it is impossible to diagnose them with any degree of certainty. Persistent headache, vomiting, double optic neuritis and frequent epileptic attacks are among the more common and prominent symptoms, and when they are all present in any case we are justified, in the absence of the distinguishing signs of some other form of intracranial lesion, in referring the morbid phenomena to cerebral tumor. Where the other symptoms correspond, very limited paralysis points to this cause; and so, also, do epileptic convulsions occurring late in life, especially if unilateral, or unattended with loss of consciousness.

Certain characteristic symptoms will often serve to locate the tumor with considerable accuracy. Thus, when seated in the convexity there are epileptic spasms with severe headache, but no anaesthesia or paralysis. When the anterior lobes are concerned, there are frontal headache, anosmia and more or less mental disturbance. When one of the parietal lobes is involved there is anaesthesia, with slight unilateral paralysis. Tumors of the corpus striatum produce hemiplegia; of the corpora quadrigemina, ocular paralysis, blindness and hemiplegia; of the area near the optic chiasm, headache, anosmia, hemiopia, paralysis of the ocular muscles, and anaesthesia of the parts supplied by the fifth nerve. When the cerebellum is implicated, the symptoms are occipital headache, vertigo and tottering gait. Tumors of the pons produce paralysis of the muscles supplied by the third, fifth and sixth nerves, difficulty of swallowing and crossed paralysis of the limbs. Tumors of the medulla oblongata produce convulsions, anaesthesia, defective articulation, difficulty in swallowing, diabetes mellitus and paralysis of the bladder.

Pathology.—Tumors of the brain have been classified as

follows: (1) The *diathetic*, or cancerous, tuberculous and syphilitic; (2) the *parasitic*, or those caused by the echinococcus (hydatids) and those produced by the cysticercus; (3) the *vascular*, or aneurismal; and (4) the *accidental*, which include the fibro-plastic, gliomatous, cholesteatomatous, osseous, enchondromatous, mucous, lipomatous, melanotic and other less important varieties.

The pressure produced by cerebral tumors on the brain substance not only causes local symptoms, but not infrequently leads to fatty degeneration and atrophy of remote parts. It also causes displacement of the parts in the immediate vicinity of the tumor, renders the cerebral tissue dry and anæmic, and causes more or less atrophy of the nervous structure.

Clinical Experience.—Marked relief has been obtained, in a number of cases, by the administration of Calc. carb., Graph., Sepia, Bell., Arn., Conium, Bry., Kali carb. and Bar. carb. *Calcarea* has proven most useful in atheromatous, fibrous and lipomatous forms; *Graphites* and *Baryta carb.* in the atheromatous and lipomatous; *Sepia* in the fungoid and cancerous; *Belladonna* and *Kali carb.* in the fibrous; *Arnica* in the haematomatous; *Conium* in the fibroid and fibro-scirrhouus.

Therapeutic Indications.—Tumors not only produce by pressure the symptoms of *sclerosis*, but they cause *anæmia*, *hyperæmia*, *hæmorrhage*, *inflammation*, *softening*, *epilepsy*, *paralysis* and *atrophy*. According, therefore, as the symptoms in any particular case correspond with one or more of these conditions, the remedies should be selected agreeably to the therapeutic indications given thereunder.

Auxiliary Treatment.—Little can be done in these cases, in the way of accessory treatment, except to aid in restoring the contractility of the paralyzed muscles by the *induced galvanic current*. A moderately weak current is generally to be preferred, and in no case should it be strong enough to cause much pain. The wet sponge of one electrode should be placed upon the paralyzed muscle and the other held in the patient's hand, or applied to the nape of his neck, for a few minutes every day or two. In no case should the current be allowed to traverse the region of the tumor.

CEREBRAL CONCUSSION.

Synonyms.—Concussion of the Brain, Commotio Cerebralis; *Fr.*, *Commotion du Cerveau*; *Ger.*, *Erschütterung des Gehirns*.

Definition.—A shock or jar given to the nervous elements of the brain, whereby its functions are temporarily suspended, and the vital power more or less depressed.

Diagnosis.—The diagnosis is generally easily made, as more or less external injury, the result of a fall or blow, is usually associated with it. It may, however, be mistaken for compression, unless the symptoms are carefully compared, as in the following table:

Cerebral Concussion.	Cerebral Compression.
Development sudden.	Not always so.
Can usually be roused if loudly spoken to.	Insensibility complete.
Respiration sighing, slow, irregular.	Respiration stertorous, slow.
Pulse soft, feeble, fluttering, intermittent.	Pulse slow.
Frequent vomiting.	No vomiting.
Urine and faeces passed involuntarily.	Urine and faeces retained.
Pupils react.	Pupils insensible to light.
Paralysis usually none; if present, generally of one or more cranial nerves.	Paralysis usually hemiplegic.

Pathology.—The effects produced by concussion are generally the result of simple shock, the character of the injury being such as to temporarily depress the vital power, and in some cases to result in death. That this is always the case where no lesion is discoverable after death, cannot, of course, be proven, because a minute haemorrhage or other injury at some vital point, as, for example, at the internal origin of the pneumogastric nerve, would no doubt be sufficient to produce speedy death; but it is more reasonable to refer the fatal issue in these cases to shock alone than to causes which may have no existence.

Clinical Experience.—*Glonoin*, *Arnica* and *Camphora* are usually the first remedies prescribed in these cases, *Aconite*

being given in alternation with them to moderate reaction and to prevent inflammation. After reaction is established, if attended with cerebral disturbances, *Belladonna*, *Hyoscyamus* or *Stramonium* is usually given, as may be indicated. *Opium* and *Laurocerasus* are sometimes used, in cases where there is great depression, stertor and tendency to collapse.

Therapeutic Indications.—*Glonoin*.—Reactive power feeble and of slow development; pulse weak; surface cold but not clammy.

Arnica.—An excellent remedy for injuries of the brain attended by insensibility and unconsciousness; if fever supervenes, alternate with *Aconite*.

Camphora.—During the *first stage*, to promote reaction; surface cold and clammy; face pale; muscular twitchings.

Cicuta.—*First stage*, insensibility profound; face cold and deadly pale; cold hands, feet and limbs; inability to swallow; great depression of the vital power; delirium; convulsions.

Hypericum.—*Second stage*, with frequent pulse, swollen face, short breathing and tendency to start, with shuddering over the whole body.

Belladonna.—*Second stage*, when attended by excessive reaction; headache, flushed face and delirium; if fever is high, alternate with *Aconite*.

Hyoscyamus.—*Second stage*, attended by low, furious delirium.

Gelsemium.—Remains stupid and drowsy after slow reaction; pain in back of the head, pupils still dilated; paralysis of the lower sphincters.

Laurocerasus.—Slow, feeble pulse; sunken countenance; skin cold and blue; audible breathing, with moaning; trembling of the limbs; involuntary discharge of faeces.

Vipera.—Pulse slow, feeble and irregular; surface cold and covered with cold perspiration; difficulty of swallowing; hemiplegia, or paralysis of a single limb; vomiting; delirium.

Lachesis.—*Apoplectic symptoms*, with low, muttering delirium, pale face, cold extremities; paralysis of the left side.

Conium.—*Apoplectic symptoms*, slow, weak pulse; dilated pupils; tendency to collapse; trembling of the limbs; delirium, convulsions, numbness, paralysis.

Auxiliary Treatment.—Brandy internally, or *Amyl nit.* by inhalation, is among the speediest means of overcoming the depression of the vital power, but care should be taken not to overstimulate the circulation, the aim being simply to reëstablish the normal condition. In most cases it is only necessary to wrap the patient in warm blankets, apply friction to the surface, and use dry heat to the extremities. As soon as reaction sets in, the case is one for medical treatment only, no other form of stimulation being appropriate.

SUNSTROKE.

Synonyms.—Insolation, Insolatio, Heatstroke, Thermic Fever; *Fr.*, *Coup de Soleil*; *Ger.*, *Sonnenstich*.

Definition.—Various syncopal, asphyxial and hyperpyrexial conditions, resulting from exposure to solar or artificial heat.

Diagnosis.—The appearance of the patient, taken in connection with the history of the case, is usually sufficient to establish the diagnosis. By comparing the symptoms with those given in the table on page 50, it may be easily distinguished from *concussion* and *compression*, with which alone it is liable to be confounded.

Pathology.—In rapidly fatal cases the brain and its membranes, and also the lungs, are but slightly congested; the greatest changes are observed in the venous trunks, especially those of the abdomen, the right side of the heart and the pulmonary vessels, all of which are sometimes engorged with dark, grumous blood, while patches of ecchymoses are also scattered over the surface of the body. These appearances are chiefly due to nervous shock, which, by paralyzing the heart and lungs, leaves the venous system engorged with blood. In thermic cases a similar condition often exists, together with a more or less congested state of the brain and its membranes. This condition is the result of heat on the nerve-centres, and through them on the vaso-motor nerves. As a consequence, the nerve-centres generally, and especially the respiratory, suffer from overstimulation, and this is followed by exhaustion.

Clinical Experience.—*Glonoïn, Arnica, Camphora, Amyl nit., Gelsemium, Belladonna, Veratrum vir., Lachesis, Scutellaria, Cactus and Carbo veg.* are the principal remedies relied upon in the treatment of sunstroke.

Therapeutic Indications.—**Glonoïn.**—After reaction has set in, or when there is intense headache, with throbbing in all parts of the head; *painful constriction of the heart*; sensation as if all the blood had gone to the head; *fainty feeling, with complete muscular relaxation*; oppression of breathing, with numbness of the limbs. Especially adapted to the thermic and syncopal forms.

Amyl nit.—Violent determination of blood to the head and face; violent beating of the cervical and temporal arteries; great difficulty of breathing.

Camphora.—Great depression of both the nervous and circulatory systems; coldness of the body; tremors and cramps; oppression of breathing; *syncopal form*.

Belladonna.—Indicated when apoplectic or irritative symptoms exist, such as coma, stertorous breathing, headache, vertigo, delirium, sensitiveness to light and sound, etc.

Antimonium crud.—Syncopal form, with fainting, nausea, vomiting, etc.

Carbo veg.—Extreme prostration of the vital power; heat exhaustion.

Aconite.—Thermic form; burning heat, especially in the head and face; *heat and dryness of the skin*, with thirst, headache, redness of the eyes, anxiety and difficulty of breathing.

Veratrum vir.—Congestion to the head and chest; gastric disturbances, especially vomiting; fainting, with coldness of the limbs. Useful in both the thermic and syncopal forms of sunstroke.

Scutellaria.—Great fulness and oppression of the head, with flushed face; *oppression of the chest, with throbbing about the heart*; general uneasiness, with twitching of the muscles; sticking pains in various parts of the body.

Arnica.—Often the only remedy required, especially in the syncopal form; also useful where there is great depression of the vital power, with coldness of the limbs, stupor and semi-paralysis.

Digitalis.—Cardiac weakness, with great prostration and tendency to syncope from heat-exhaustion.

Auxiliary Treatment.—In ordinary cases of sunstroke, arising from long exposure to the direct rays of the sun, or where the temperature is far above the normal standard, the burning heat of the surface should be reduced as quickly as possible by the free application of the cold water douche, ice and ice-water to the head and neck, cool air, fanning, etc., being careful at the same time not to use the ice or the douche too long, or after the skin becomes cool. On the other hand, these measures should never be adopted if the skin be cold and clammy and the respiration sighing. The syncopal form, arising from heat-exhaustion, requires precisely the opposite treatment. In these cases there is an entire absence of fever, the pulse is soft and compressible and the skin cool. The indications here may be met by lowering the head and giving the patient small and frequent quantities of hot beef-tea, store tea, coca, etc. This condition calls for *Digitalis* rather than alcohol, the remedy usually administered. For further information on this subject, see the author's work on *Intracranial Diseases*, p. 294.

CEREBRAL PARALYSIS.

Synonyms.—Paralysis of Cerebral Origin, Common Palsy, Hemiplegia; Fr., *Paralysie Cérébrale*; Ger., *Gehirnlähmung*.

Definition.—Loss of the power of voluntarily exciting the contraction of muscles on one side of the body, caused by disease of the brain.

Diagnosis.—Cerebral paralysis may generally be distinguished from paralysis of spinal origin by its being confined to one lateral half of the body. When complete, as in most cases of cerebral haemorrhage and other varieties of apoplexy, it usually takes the form of hemiplegia. Very rarely the paralysis, instead of being unilateral, is bilateral; but then it occurs as two separate hemiplegiæ, not as a paraplegia, one side being more severely affected than the other. Not infrequently the paralysis is limited to the parts supplied by particular nerves and plexuses. Cerebral symptoms, more or less

conspicuous, are almost invariably present, such as those which characterize cerebral haemorrhage, thrombosis, embolism, tumors, etc., these being the principal causes of the paralysis. Motor irritation, in the forms of muscular spasm, twitching and contraction, is common in the affected parts, and so also are epileptiform convulsions; but reflex movements are commonly preserved, and even increased in energy, while automatic and associated movements remain, as a rule, unaltered.

Pathology.—Encephalic lesions, of various kinds, constitute the gross pathological condition in cerebral paralysis. These lesions are numerous and varied, comprising haemorrhage, vascular obstruction, inflammation, softening, tumors, etc. They give rise to certain characteristic symptoms, according to the particular part affected. Thus paralysis arising from lesions of the cortex takes the form of monoplegias, partial hemiplegias, paralyses of the glossal, facial and brachial nerves, or of the nerves of the face and arm, or arm and leg. Lesions implicating the region of the basal ganglia, if extensive, produce hemiplegia and cerebral hemianesthesia. When the region of the left middle cerebral artery is invaded we usually have aphasia. Cerebellar disease produces incoördination and a titubating gait. A peculiar form of *alternate paralysis* is produced by lesions in the lower and inner part of the crus cerebri, and in the lower lateral half of the pons. In the former case, the motor-oculi nerve is paralyzed on the side of the lesion, and at the same time there is a hemiplegic condition of the opposite side of the face and body; in the latter, a paralysis of the face on the side of the lesion, and more or less paralysis of the trunk and limbs on the opposite side. Lesions of the medulla oblongata, in addition to paralysis, give rise to respiratory and circulatory disturbances, aphonia, dysphagia, anaesthesia, dysæsthesia, etc., from implication of nerve roots arising from it. Atrophy of the muscles seldom occurs in connection with cerebral paralysis except in disease of the pons.

The **therapeutic indications** pertaining to cerebral paralysis are given under the several diseases of which the paralysis

is a symptom, *especially cerebral haemorrhage*. See, also, *infantile cerebral paralysis* and *progressive general paralysis*.

INFANTILE CEREBRAL PARALYSIS.

Synonyms.—Poliencephalitis Acuta, Hemiplegia Cerebralis, Spastica; Fr., *Paralysie Cérébrale de l'Enfance*; Ger., *Kinder-lähmung des Gehirns*.

Definition.—A peculiar form of infantile paralysis, of encephalic origin, usually hemiplegic, and commonly attended by athetosis, epilepsy and impaired intellect.

Diagnosis.—The disease is most liable to be mistaken for infantile spinal paralysis, from which it may be differentiated by means of the following table:

	Infantile Spinal Paralysis.	Cerebral Paralysis.
Initial stage.	Fever, convulsions, loss of consciousness. These may all fail, and this stage be unnoticed.	The same.
Age.	Paralysis usually begins 1—4, seldom later.	Generally under 4, may occur immediately after birth.
Paralysis.	Monoplegias and paraplegias, seldom hemiplegias.	Hemiplegias commonest, monoplegias sometimes, paraplegia rare.
The nature of the paralysis.	Muscles "flail-like," contractures form after long time.	Slight contractures form early, recovery is constant.
Electric reactions.	Faradaism strongly reduced. R. D. obtained.	Faradaism retained, no R. D.
Sensation.	Unchanged.	Scarcely changed.
Tendon reflexes.	Lost.	Exaggerated.
Temperature and color of limbs.	Lowered, and limbs look livid and feel cold.	Temperature not lowered, limbs of normal color and warmth.
Inhibition of growth.	Strongly marked.	Not so marked, generally mostly so in upper limb.
Motor affections.	Not present.	Athetosis and epilepsy.
Intelligence.	Unaffected.	Often lost.
Bladder and rectum.	Not affected.	Now and then slightly affected.
Paretic contractures.	Pes varus, " valgus, " calcaneous, " equinus, } and combinations of these.	Generally nothing except equinus spasticus, and contraction of knee.

Pathology.—The motor gray matter of the cerebral cortex is the seat of an inflammatory process, pathologically resembling that found in acute spinal paralysis, leading to permanent loss of function of the part, due to subsequent atrophy and destruction of the affected area.

Clinical Experience.—I can find no well-defined homœopathic clinical experience recorded concerning this newly-described disease; but as it is of a similar nature to infantile spinal paralysis, and as cerebral cases of what have heretofore been regarded as cases of that disease have occasionally been described under the name of the “essential paralysis of childhood,” we are justified, I think, in regarding the clinical history of such cases as belonging to this affection. This gives us *Stannum*, *Gelsemium*, *Arnica* and *Belladonna* as being remedies of marked value in this disease.

Therapeutic Indications.—*Stannum*.—Paralyzed parts constantly moist from perspiration; paralysis of the *left side*; pain, accompanied with a *sense of faintness in the brain*.

Gelsemium.—Loss of will-power over the muscles; pain in the top and back of the head, with stupor, verging to coma; *convulsions, followed by paralysis*.

Belladonna.—Paralysis of the *right side*; great restlessness, with sudden startings; *congestion and irritation of the brain*.

Arnica.—Cerebral inflammation, *followed by exudation*; the child cannot bear to have its head moved, *owing to soreness of the brain*.

Consult, also, the indications given under *acute hydrocephalus*, *progressive general paralysis* and *infantile spinal paralysis*.

Auxiliary Treatment.—Ice or ice-cold water applied to the head during the initial stage is useful, but at a later period cloths wrung out of hot water are more serviceable. Great care should be taken to keep the lower extremities, and especially the paralyzed parts, warm. At a later stage, moral treatment may be necessary, in consequence of the dementia, especially as regards cleanliness, the imitative faculty being trained for this purpose.

EXTERNAL CEREBRAL PACHYMENTINGITIS.

Synonyms.—Traumatic Cerebral Pachymeningitis, Secondary Pachymeningitis, Pachymeningitis Acuta; *Fr.*, *Pachymén-ingite Secondaire*; *Ger.*, *Secondäre Pachymeningite*.

Definition.—Inflammation of the external layer of the dura mater, usually acute, but sometimes chronic, secondary to inflammation of the adjacent bone, and commonly due to injury of the head.

Diagnosis.—This affection cannot be diagnosed with certainty, but fever, severe headache and stupidity, coming on soon after an injury to the head, point to its existence. The diagnosis is confirmed if symptoms of pyæmia supervene, this being a very common complication in these cases.

Pathology.—Both the pachymeningitis and the pyæmia, when present, are due to inflammation of the bone. The pyæmic infection is caused by the decomposing material from the seat of injury finding its way into the circulation through the veins of the diploë, which become inflamed in conjunction with the gangrenous osteitis.

Clinical Experience.—*Arnica*, *Hypericum*, *Belladonna* and *Aconite* are usually prescribed in traumatic cases as soon as inflammatory symptoms appear, the two latter generally in alternation, after *Arnica* or *Hypericum* has been given. *Mercurius* and *Kali iod.* are usually given when the symptoms seem to depend upon syphilis or when the case has a syphilitic history. *Gelsemium* and *Opium* are resorted to when there is much stupor. *Chin. sulph.* and *Arsenicum* are usually preferred after toxæmia and adynamia make their appearance, *Calendula* being sometimes previously given to prevent suppuration. *Eucalyptus* and *Salicylic ac.* are also sometimes given as antiseptic remedies.

Therapeutic Indications.—These are similar to those given under the head of *simple acute meningitis*, which see.

Auxiliary Treatment.—External pachymeningitis is, at the outset, a purely surgical disease, and demands surgical treatment. After carefully cleaning the wound, if the bone is depressed the trephine should be at once applied, so as to

prevent the supervention of meningitis, by elevating the bone, removing detached fragments, if any, and allowing a free escape of the secretions. A dressing of charpie, or of borated cotton, saturated with *Calendula* or *Hypericum* lotion, should then be applied, and this should be kept constantly moistened. The diet should be nutritious and easily digestible, but not stimulating.

INTERNAL CEREBRAL PACHYMENTINGITIS.

Synonyms.—Cerebral Meningeal Hæmorrhage, Hæmorrhagic Pachymeningitis, Chronic Pachymeningitis, Hæmatoma Duræ Matris; Fr., *Hémorrhagie des Méninges*, *Hémorrhagie Méningée Cérébrale*, *Apoplexie Méningée*; Ger., *Hirnhautblutungen*.

Definition.—A peculiar form of meningeal hæmorrhage, the result of chronic inflammation of the dura mater, in which the effused blood is collected in sacs formed of false membrane.

Diagnosis.—A constant and very severe headache, with a gradually increasing tendency to stupor, slow and irregular pulse, contracted pupils, but unattended by facial paralysis, convulsions, fever or vomiting, is regarded by Jaccoud and others as sufficient to indicate the existence of this form of meningeal hæmorrhage.

Pathology.—Extra and intra-meningeal hæmorrhages are almost always the result of direct injury, such as is produced by wounds, trephining, etc.; but hæmatoma of the dura mater is the result of chronic pachymeningitis, and is met with under the dura mater, in the form of oval sacs, sometimes several inches in diameter, and half an inch or so in thickness. They are generally seated near the sagittal suture, and extend to both hemispheres, with only the arachnoid and pia mater between. The contained blood is either in a liquid or a coagulated condition, and, as in other sanguineous collections, exhibits in different cases similar stages of degeneration.

Clinical Experience.—This does not materially differ from what is given under this head in *cerebral hyperæmia*, *hæmorrhage* and *tumors*, which see.

Therapeutic Indications.—Identical with those given in

treating of the above-named diseases, and to which reference should be made.

Auxiliary Treatment.—The great mental and bodily infirmity which sooner or later overtakes the patient may be palliated, and its development retarded, by such hygienic measures as are calculated to invigorate the system, such as fresh air, good, nutritious food, agreeable company, etc.

CEREBRAL ARACHNITIS.

Synonyms.—Inflammation of the Arachnoid Membrane of the Brain, Traumatic Arachnitis; *Fr.*, *Inflammation de l'Arachnoïde*; *Ger.*, *Entzündung der Arachnoidea*.

Definition.—Inflammation of the cerebral arachnoid membrane, due in most cases to injury of the head.

Diagnosis.—If the evidences of arachnitis are widely diffused over one of the hemispheres, and are at the same time accompanied by hemiplegia of the opposite limbs, the hemiplegia involving both sensation and motion, we may safely conclude that the case is one of true cerebral arachnitis.

Pathology.—The possibility of the existence of cerebral arachnitis has been called in question on the grounds that the so-called parietal layer of the arachnoid does not exist, while the inflammation of the visceral layer never occurs without simultaneous inflammation of the pia mater; but this opinion is successfully controverted by the fact that in cerebral arachnitis an even layer of purulent lymph is found to cover the cerebral convolutions without dipping into the sulci, being prevented by the intervening arachnoid membrane, which stretches across instead of entering the cerebral depressions; whereas, when the subarachnoid spaces are involved, the sulci are filled with lymph, and the internal surface of the arachnoid remains free and unaffected.

Clinical Experience.—This is the same as in inflammation of the adjacent membranes—*Aconite*, *Belladonna*, *Apis*, *Bryonia*, *Mercurius*, *Kali iod.* and *Sulphur* being given according to the special indications.

Therapeutic Indications.—These do not materially differ

from those given under the head of *simple cerebral meningitis*, which see.

Auxiliary Treatment.—Traumatic cases require surgical treatment, similar to that given under the head of *external cerebral pachymeningitis*, to which reference should be made. Idiopathic cases, which are comparatively rare, are usually complicated with *simple cerebral meningitis*, and therefore the accessory treatment recommended thereunder will be appropriate.

TRAUMATIC CEREBRAL LEPTOMENINGITIS.

Synonyms.—Traumatic Inflammation of the Pia Mater of the Brain, Subarachnoid Meningitis, Leptomeningitis Cerebralis; Fr., *Méningite Consecutifs à la Carie du Rocher*; Ger., *Secondäre Leptomeningite, Akute Connexitäts Meningitis*.

Definition.—An inflammation of the pia mater of the brain, involving primarily the areolar tissue of the subarachnoidean spaces, usually due to some injury implicating the base of the skull.

Diagnosis.—The disease may be suspected when, after supposed injury of the base of the skull, vague cerebral symptoms, unattended by decided paralysis, make their appearance; and if the petrous bone has been fractured, as shown by bleeding from the ear and deafness, with facial paralysis in the first place, then the existence of this form of meningitis may be regarded as reasonably certain.

Pathology.—The inflammation is supposed to gain access to the subarachnoid spaces by traveling along the trunk of the seventh nerve, and afterward spreading upward through the posterior fissures to the ventricles, or over the surface of the hemispheres, or else downward on the medulla oblongata and its connections. The subarachnoidean inflammation may, however, result from the admission of air through the fracture, either by way of the external meatus or the Eustachian tube, for the fracture, instead of being a simple one, is actually compound. Indeed, it is highly probable that this is the true explanation, as the admission of air into wounds, especially

suppurating ones, not only greatly changes the character of the inflammation, but contaminates the air itself, which may thereafter become the vehicle of its transfer to more distant parts.

Clinical Experience.—*Apis, Hypericum, Bryonia* and *Silicea* have been given with good results in this form of leptomenitis, though such cases, in the long run, almost always prove fatal. *Apis* and *Bryonia* are given to promote absorption of serous effusions, and *Silicea* to limit or prevent suppurative action.

Therapeutic Indications.—These are similar to those given under the head of *simple cerebral meningitis*, which see.

Auxiliary Treatment.—There is nothing very peculiar about this form of meningeal inflammation, except so far as its surgical features are concerned. Should the discharge from the ear become purulent—which, if the patient lives, it is almost certain to do—great care should be taken to insure its free and uninterrupted evacuation, and for this purpose I have usually found nothing better than warm fomentations, or the steam from a steam atomizer, applied to the aural region, whenever the flow becomes suddenly interrupted or the patient suddenly comatose.

SIMPLE ACUTE CEREBRAL MENINGITIS.

Synonyms.—Meningitis, Cerebral Meningitis, Simple Cerebral Meningitis, Idiopathic Cerebral Leptomeningitis, Lepto-meningitis Cerebralis, Leptomeningitis Infantum, Hydrocephalus Acutus sine Tuberculosis; *Fr.*, *Méningite Simple*; *Ger.*, *Allgemeine Akute Hirnhautentzündung*.

Definition.—A simple acute inflammation of the pia mater of the brain.

Diagnosis.—Simple cerebral meningitis is most liable to be mistaken for the tubercular form of the disease, especially when it involves the base of the brain. The following table gives the differential diagnosis between them:

Tubercular Meningitis.

Onset gradual.

Temperature 102° to 103° , not continuous but very irregular, falling sometimes for a day or so down to normal, or nearly so.

Pulse compressible, rapid, and, after first week, intermitting, losing occasionally a beat.

Face looks usually pale.

Eyes not injected; squinting toward end of disease; pupils uncertain, later dilated.

Tongue slightly coated.

Vomiting frequently in the beginning; will appear by itself, not only after eating; ceases generally when convulsions begin, toward latter part of disease.

Bowels very constipated.

Cough harassing and obstinate; generally physical signs of tubercular deposits in the apices.

Convulsions appear at beginning of about last third of the ailment; may continue for one or more weeks, gradually increasing in number and severity as death approaches.

Duration about three weeks; may be much longer.

Prognosis: invariably fatal.

Post-mortem appearances: deposits of small tubercular bodies, mainly at the base of the brain; signs of inflammation of membranes, effusion of fluid and formation of lymph; deposits in other parts of the body.

Simple Basilar Meningitis.

Beginning most abrupt.

Temperature 102° to $103\frac{1}{2}^{\circ}$; continues at that height throughout the disease; never sudden and great changes.

Pulse rapid and somewhat tense; always regular, except, perhaps, during agony of death.

Face flushed.

Eyes always injected, occasionally squinting; eyes apt to be very sensitive to light; pupils often contracted.

Tongue red.

Vomiting generally first symptom, and continues to the last; happens only immediately after eating.

Bowels not constipated; there is often diarrhoea.

Cough mild; mostly due to bronchial irritation; percussion clear.

Convulsions immediately before death, never continuing longer than a day, or at most two, followed by a comatose condition.

Duration less than a week; sometimes only two to four days; never longer than seven.

Prognosis: grave, but not necessarily fatal.

Post-mortem appearances: never any granular deposits; signs of inflammation of arachnoid and pia mater, often severe, especially at the base; associated with abundant effusion and copious accumulation of lymph.

Pathology.—It is generally supposed that no gross patho-

logical changes involving the pia mater are discoverable after death by this disease; but this is not, strictly speaking, correct. Abnormalties are found, according to the stage of the disease, consisting either of a gelatinous white or yellow lymph-like matter, puriform, or else in the form of membranous layers. They are generally limited to the convexity, but sometimes they involve both the lateral regions and the base of the brain. The inflammation is not always confined to the pia mater, but sometimes implicates the adjacent tissues, in which case we have a *meningo-cerebritis*, of variable seat and extent.

Clinical Experience.—The remedies most commonly employed in simple meningitis are: *Aconite* during the initial stage, with high fever, delirium, etc., followed by *Belladonna*, *Atrophine 3x*, *Hyoscyamus*, *Stramonium* or *Bryonia*, as the delirium, pains, etc., become more pronounced and severe. *Apis*, *Helleborus*, *Bryonia*, and sometimes *Opium* are given when there are much depression and stupor, indicating effusion, or when there are low muttering delirium, coldness of the extremities, etc. *Zincum* and *Zincum brom.* have proved beneficial in advanced cases, even after paralysis has supervened.

Therapeutic Indications.—*Aconite*.—At the outset of the disease, or when there is high fever, with *dry, burning heat of the skin*, red inflamed eyes, pulse full and hard, *pupils contracted* and burning, throbbing or lancinating pains in and through the whole head; *anxiety or great anguish*; delirium; vomiting of bile; convulsions; spasmodic contractions; paralysis.

Belladonna.—Face and skin *red, burning* and *swollen*; red and sparkling eyes; lancinating, stinging or burning headache; *delirium, with frequent vomiting*; pulse small and quick, or intermittent; insensibility, spasms and paralysis.

Hyoscyamus.—Delirium, gradually passing into stupor and coma; red, burning face, red and sparkling eyes, contracted pupils, strong and quick pulse, sticking pains in the head; *wild delirium*, the patient *singing, muttering, smiling, talking wildly*; starting suddenly; picking at the bed-clothes, with loss of consciousness, dilated pupils, cold and pale face, weak and intermitting pulse and paralysis.

Digitalis.—Stupor, gradually deepening into coma; *irregular action of the heart, sometimes very weak*, at others strong; small and slow pulse; dilated pupils, with insensibility of vision; general or partial convulsions; especially suited to the last stage, or stage of depression.

Apis mel.—Infantile cases, with delirium, loss of consciousness and *occasional shrill screams*; bending back and rolling of the head; squinting of the eyes; child puts its hand to its head while it screams, even when unconscious; face pale, or marked with red streaks or spots; *scanty or suppressed urine*; very frequent and weak pulse, or else slow and irregular; convulsions, trembling of the limbs and paralysis. Secondary meningitis from suppressed erysipelas or other exanthem.

Stramonium.—Violent delirium, accompanied by frightful screams; *opisthotonus*; vomiting; red face, with thirst and great dryness of the mouth; convulsive movements of the limbs; moaning and tossing about; *staring look*, especially on waking; feverish heat, *moist skin*; sleep almost natural, but on being aroused patient does not recognize his friends; retention of urine.

Cuprum.—Head hot, with sharp, lancinating pains shooting through it; red, inflamed and rolling eyes, with delirium or stupor; quick, strong pulse, with more or less vomiting; *tonic spasms and convulsions*; suited also to the *last stage*, attended with slow, small and weak pulse, blue, shrunken face, dimness of vision, *moist hands and paralysis*; specially adapted to cases in which there is *irritation of the spinal cord*.

Bryonia.—During the first stage, with sharp, shooting pains in the head, especially through the temples, red and inflamed eyes, hot and burning skin, delirium, cramps, etc.; also, *at a later period, when the disease is verging into that of depression*, with stupor, dim and glossy eyes, slow and irregular pulse, cold, pale, moist skin, dry and brownish tongue; also when the patient bends the head backward, constantly works the jaws, or starts suddenly from sleep, screaming, with cold sweat on the forehead.

Glonoin.—Intense headache, with *throbbing of the temporal arteries*, red face, full and rapid pulse, hot and staring eyes,

ringing in the ears and vomiting; *brain feels too large for the skull*; globe of the eye feels sore; *irregular pulse, with moist skin*. Suited to every stage of the complaint.

Gelsemium.—Child drowsy and wants to be let alone; frequent startings in sleep; *bore its head backward into the pillow*; constant fever, though without much thirst; head hot, but the hands and feet cool and moist; nausea, with blindness; especially suited to children teething.

Cimicifuga.—Pain in and behind the eyeballs, extending through to the occiput; tongue clean, but pointed and trembling; pain increased by movement of the eyes; *soreness and stiffness of the muscles*; excruciating pains in the head, increased by movement; *delirium, with incessant talking*.

Helleborus.—Head drawn back, with stiffness of the cervical muscles; eyes staring and oblique; *forehead contracted and covered with perspiration*; frequent starting and screaming during sleep; *working of the jaws*; breathing irregular, sometimes quick, at others slow and deep, or sighing; jerking of the limbs, with convulsive movements of individual muscles.

Opium.—Stupor and insensibility, with stertorous breathing, dilated pupils, half-open eyes, small, weak, irregular pulse and suppressed urine; when aroused, patient relapses immediately into a state of insensibility.

Æthusa cyn.—Obstinate vomiting; pupils dilated and insensible to light; coma, with cold skin, pale face and collapsed appearance; drawing in the back of the neck; tetanic convulsions.

Anacardium.—Sequæ of brain fever, with total loss of memory; weakness of all the special senses; mental dulness and confusion; incomplete paralysis of the voluntary muscles.

Auxiliary Treatment.—During the active, inflammatory stage, marked by high fever and excitement, ice to the head is almost indispensable; at a later period, and especially during the stage of depression, cloths wrung out of hot water are more suitable. As the power to digest proteids is nearly, if not quite, abolished, and the secretion of saliva greatly diminished, only such articles as sweet whey, fruit decoctions, water gruel, etc., will be appropriate until the beginning of convalescence,

when we may gradually administer more concentrated farinaceous preparations, milk, with malt extract, light broth or Liebig's infant food. This cautious diet is necessary during the stage of convalescence, because, if complicated with fever, as it is apt to be from indigestion, the disturbance thus produced is liable to retard the absorption of the exudation.

TUBERCULAR CEREBRAL MENINGITIS.

Synonyms.—Tubercular Inflammation of the Cerebral Meninges, Granular Meningitis, Acute Hydrocephalus, Hydrocephalus Internus, Tubercular Leptomeningitis; *Fr.*, *Fièvre Cérébrale*, *Méningite Tuberculeuse*, *Méningite Granuleuse*; *Ger.*, *Tuberculöse Hirnhautentzündung*.

Definition.—An acute inflammation of the cerebral membranes, especially of the pia mater, at the base of the brain, complicated with, and dependent upon, a growth of tubercles in the brain and other parts of the body.

Diagnosis.—The differential diagnosis between this disease and *simple basilar meningitis* is given under the latter head, which see. *Typhoid fever*, to which at times it bears a very close resemblance, may be distinguished from it by means of the following table:

Tubercular Meningitis.	Typhoid Fever.
FIRST STAGE.	
There is a gradual loss of flesh, extending over some weeks or months.	Loss of flesh only apparent after fever process has existed some time.
Irritability more intense and prolonged; restless during sleep.	Irritability not so intense; quieter during sleep.
Shunning light is common.	Absent.
Temperature has no characteristic change; may be high in the morning and low in the evening, or the same morning and evening.	Typical fever curve; gradual ascent, having low fever in the morning and higher in the evening.
Vomiting causeless, and not connected with ingesta. May find a clean tongue.	Vomiting nearly always connected with curdled milk or repugnant medicine. Coated tongue.

SECOND STAGE.

Headache not aggravated at any particular time of the day.	Headache always aggravated toward evening, when the fever ascends.
Nearly always constipation.	Diarrhoea, as a rule; exceptionally, constipation.
No abdominal tenderness.	Abdominal tenderness and tympanitis.
Pulse of good volume, moderately slow, and occasionally irregular.	Pulse soft, rapid, and never irregular.
No epistaxis.	Often epistaxis.

THIRD OR ADVANCED STAGE.

Irregular temperature curve or no fever at all.	Continued fever, stationary, or ascending gradually with the morning remission.
Now the vomiting generally ceases.	May have vomiting of ingesta.
Stupor is continual, patient not easily aroused, and immediately falls back again into his former state.	Is easily aroused; remains awake for a time and requests drink. Is usually rational during the time of being awake.
Obstinate constipation.	Generally diarrhoea, yellow or brownish stools.
Retraction of abdomen.	Tympanitis and tender abdomen.
Tâche cérébrale; sudden and spontaneous blushing of cheek and of parts exposed to pressure.	Roseolar eruption.
Cheyne-Stokes breathing.	
Pulse very irregular.	Breathing at times very irregular, quite sighing, but not the rhythmical irregularity. One day regular, and the next very irregular.
Spleen normal.	Pulse weak and regular.
Local palsies and local spasms; fixedness of the eyes; unequal or dilated pupil.	Spleen enlarged and tender.
Extreme tenderness elicited on pressing the femur.	No such manifestations.
Urohæmatin, but no albumen or indican in the urine.	No tenderness on pressure.
	Indican and albumen always present in the urine.

Pathology.—The tubercular matter is mainly found along the course of the vessels of the pia mater, at the base of the brain, a fact which serves to explain the motor disturbances observed in this disease. Its ordinary seat is along the middle meningeal artery and its branches; but it is sometimes deposited, though rarely, on the convexity. The pia mater is always

more or less inflamed, thickened, infiltrated, and covered with sero-plastic or purulent exudates. The ventricles are distended with serum, sometimes to the point of rupture. The tubercular matter is not confined to the brain, but is usually met with in other organs, especially the lungs.

Clinical Experience.—Dr. Price, of Baltimore, thinks that he has cured at least four cases of this disease by means of *Helleborus*, *Bryonia*, *Apis* and *Artemisia vulg.* Other remedies which have been given with greater or less benefit in tubercular meningitis are: *Cicuta*, *Veratrum alb.*, *Argentum nit.*, *Kali iod.*, *Calcarea phos.*, *Zincum*, *Belladonna*, *Spongia*, *Gelsemium* and *Cina*.

Therapeutic Indications.—*Artemisia vulg.*—Child lies in a sleepy or dreamy state, drinking freely of water without being aroused; surface cold, *left side paralyzed, right in a state of chronic convulsion*; involuntary stools. Especially indicated in the last stage.

Helleborus.—Soporose condition; forehead wrinkled and covered with cold perspiration; dilated pupils; involuntary throwing about of one arm or leg; lower jaw hangs down; paralysis of one side. Chiefly indicated in the last stage of the disease, or after paralysis has set in.

Bryonia.—Constant working of the jaws; lips dry and parched; the least motion produces fainting or nausea; constipation; symptoms changing to those of depression. Indicated after effusion has set in, and the system has become more or less depressed.

Apis.—Stupor; constant motion of one arm or leg; urine scanty or suppressed; involuntary stools, which are green, lumpy and slimy; pulse irregular; one side paralyzed, the other convulsed. Specially indicated after exudation has taken place.

Calcarea carb..—Lively, precocious, large-headed children, with tender constitutions, a swollen abdomen and irregular bowels, inclined to looseness; profuse perspiration during sleep; child screams out unexpectedly without cause. Especially indicated during the prodromic or irritative stage.

Calcarea phos..—Scrofulous children, greatly emaciated, den-

tition retarded; stools loose and green, occasionally slimy; child feverish and always wanting to nurse; *craves potatoes and other forms of starchy food*; slow in learning to walk; face pale, or yellowish and sallow; looks stupid, and takes no interest in anything; *fontanelles open*. Scrofulous constitutions, both before and after tubercular disease has set in.

Kali iod.—Darting pains in the head, preventing sleep; pain and heat in the head, with red and burning face; epistaxis; drowsiness; dry and hacking cough; spasmodic muscular contraction; chilliness alternating with flashes of heat; hemiplegia. Kafka advises the early use of this remedy *before exudation has taken place as well as afterward*, the remedy having acted favorably at both periods.

Cina.—Irritative fever, with daily exacerbations, remitting after midnight; *pallor about the nose and mouth*; child bores into and picks its nose; constantly whining and moaning; cannot bear to be touched; frequently dizzy, and occasionally loses consciousness. *Prodromal symptoms*.

Belladonna.—Child lies in a drowsy or semicomatose state, from which it starts suddenly at times, but is never fully aroused; is dizzy when suddenly raised up, and not infrequently vomits; opisthotonus; pupils dilated; cannot see anything that is transpiring in the room; pupils dilated.

Lycopodium.—Somnolency, gradually deepening into coma; convulsions, either partial or general; child sleeps with half-open eyes; is very restless, throwing its head from side to side; moans and screams out in sleep; face pale and cold; neck stiff; body greatly emaciated; bowels costive. This is a highly important remedy in tubercular affections, especially when the head is involved.

Spongia.—Redness of face, with anxious expression of countenance; hyperæmia of the brain; bending of the head backward; face alternately red and pale; eyes staring, lids wide open; double vision; child frequently wakes with a start; muscular twitchings accompany the fever; somnolency and stupor. This remedy is highly recommended by Hering for this disease.

Veratrum alb.—Great inequality in the distribution of heat;

the least motion causes nausea or vomiting; neck stiff, with great tendency to convulsions; face pale, or one cheek pale and the other red; great prostration after stool; symptoms aggravated by raising the patient up; extreme thirst.

Silicea.—Children with enlarged heads and slowly-closing fontanelles; heat and redness of the face, with cold extremities; sweat about the head, face and neck; great drowsiness, but frequent startings during sleep; stomach easily sours; sour eructations, accompanied with nausea or vomiting.

Auxiliary Treatment.—Children predisposed to this disease, by reason of having inherited a scrofulous or tubercular constitution, should be carefully guarded against those unhygienic influences which favor malnutrition, such as deprivation of fresh air, sunlight, wholesome food, and especially guarding against a diet that tends to induce functional derangement of the digestive organs. Even after the disease has set in, it is important to avoid all food that might increase the vomiting, and hence milk is to be omitted, giving Liebig's or some similar infantile food instead.

Where the coughing is so severe as to produce congestion of the brain, Dr. Price, whose success in the treatment of this disease is exceptional, advises the inhalation of the fumes of *Cresoline*, which he says mitigates the cough more than *Drosera*, or any other remedy.

CHRONIC CEREBRAL MENINGITIS.

Synonyms.—Chronic Meningitis, Chronic Basilar Meningitis, and Verticular *vel* Convexital Meningitis, Chronic Syphilitic Meningitis; *Fr.*, *Méningite Cérébrale Chronique*; *Ger.*, *Chronische Hirnhautentzündung*.

Diagnosis.—There being no broad distinction between these several varieties of chronic meningitis, except that which is based on the location or *ætiology* of the morbid process, I shall include them all under one head.

The comparative mildness of the symptoms, no less than the chronicity of their course, will serve to distinguish the chronic from the acute forms; and when originating in the

latter, the previous history of the case will be sufficient to establish their nature. The softening resulting from cerebral thrombosis may be known both by the intensity of the symptoms and by the nature of the cause producing it. Thus, while the pain is less in softening than it is in inflammation of the membranes, the mental symptoms are more severe, and *vice versa*. Chronic basilar meningitis may be distinguished from the convexital variety by the disturbances produced by implication of the cranial nerves, as one or another of them becomes involved in the inflammatory process.

Pathology.—The thickening and opacity observed in most cases of chronic cerebral meningitis are believed to arise, in most cases, from overstimulation, either syphilitic, alcoholic or mental. This is highly probable, since we know that these various forms of irritation are among the most common causes of chronic meningitis. By some, the changes above referred to are regarded as a mere result of degenerative overgrowth, brought about partly by conditions incident to advancing age, and partly by frequent or long-continued congestions. Syphilitic deposits (*gumma*) are sometimes found upon the surface of the brain, but they are much more frequently met with at the base, a fact doubtless due to the much greater vascularity of that region.

Clinical Experience.—*Kali iod.* and *Mercurius* well sustain their reputation as anti-syphilitic remedies in chronic meningeal affections of the brain. Experience shows, also, that the various remedies used in other forms of meningitis are equally beneficial in this whenever the causes can be effectively removed or suspended. Thus all undue mental strain, excessive alcoholic stimulation, venery, etc., must be abandoned before the irritation and inflammatory action will yield to any form of medication.

Therapeutic Indications.—These are similar to those given under the heads of *simple* and *tubercular meningitis*, *encephalitis* and *cerebral hyperæmia*, which see. The following are special indications in paralysis of the muscles of the eye and face :

Causticum.—Paralysis of the facial and of any or all of the ocular muscles, especially when resulting from cold.

Gelsemium.—Paralysis of the oculo-motor nerve, or when it gives rise to double vision; also for paralysis of the facial muscles, and of the tongue and organs of speech.

Stramonium.—Paralysis of the ocular muscles when dependent on brain troubles, or when associated with facial paralysis.

Kali iod. and Mercurius.—When the paralysis is of syphilitic origin.

Nux vom.—When aggravated by the use of stimulants or tobacco.

Spigelia.—When the paralysis is associated with sharp, stabbing pains through the head.

Opium.—Paralysis of the ciliary and facial muscles.

Auxiliary Treatment.—The best *moral* and *supporting* measures, in addition to medical treatment, are generally required.

CHRONIC HYDROCEPHALUS.

Synonyms.—Dropsy of the Brain, Water on the Brain, Hydrops Capitis; *Fr.*, *Hydrocéphale, Hydropsie du Cerveau; Ger.*, *Der Wasserkopf, Hirnwasser-sucht.*

Definition.—A gradual effusion of serous fluid into the ventricles of the brain, in such quantity as to distend them and enlarge the head.

Pathology.—As the ventricles become more and more distended by the gradually accumulating fluid, the hemispheres slowly expand, the convolutions unfold, and the whole cerebral mass becomes thinned and distended, until at last it resembles a mere bag of brain-matter filled by the expanded ventricular membranes and their fluid contents. At the same time both the membranes and the brain substance, instead of becoming softer and less compact, are rendered tougher and denser, the lining membrane of the ventricles thicker and more resisting, the brain-matter harder and tougher. This cannot always, nor even generally, be due to previous inflammatory action; for while there is little, if any, atrophy of the brain substance, there is apparently an overgrowth of the neuroglia, due, probably, to the long-continued mechanical congestion of the tissues.

Clinical Experience.—*Calcarea carb., Aethusa and Sulphur*

are said to give the best results in chronic hydrocephalus, although *Arsenicum* is, perhaps, more frequently given than any other remedy. *Helleborus*, *Apis* and *Digitalis* are also frequently prescribed, especially when the urine is scanty and the circulation feeble and embarrassed. *Arsenicum iod.*, *Kali iod.* and *Calcarea phos.* are given in cases manifesting scrofulous and tubercular cachexiaæ, tardy dentition, etc.

Therapeutic Indications.—*Calcarea carb.*—Head greatly enlarged; *anterior fontanelle open*; old, pale, haggard expression of the face, which is thin and wrinkled, or swollen and puffed; copious sweat on the head, neck and shoulders, especially when sleeping; scrofulous swelling of the superficial glands.

Æthusa cyn.—Child cannot hold up its head, which is greatly enlarged; lies in a stupor; pulse feeble; pupils dilated and insensible to light; vomits soon after nursing; scrofulous swelling of the cervical and axillary glands.

Sulphur.—Most valuable as an intercurrent remedy; *great torpor of the system*; dulness of the senses; face pale and emaciated; retention of urine; constipation.

Helleborus.—Forehead wrinkled and bathed in cold perspiration; urine suppressed or scanty and dark; somnolency, with dulness of the senses; pupils dilated; limbs tremble from weakness; gait tottering; passive congestion, with serous effusion.

Arsenicum.—The child strikes or clutches at its head, as though for relief; retention or involuntary discharge of urine; breathing anxious and oppressed; special senses dull; stomach *emaciation and muscular weakness*; *swelling of the head and face*; irritable and weak.

Digitalis.—Head enlarged by copious serous exudation; *weak, irregular action of the heart*; great prostration; coldness of the body and limbs; weak feeling at the pit of the stomach; tendency to faint.

Apis mel..—Urine *scanty or suppressed*; pulse irregular; trembling of the limbs, with tottering gait; copious sweat of the head; stools small; great emaciation and prostration; *dry, hot skin, but no thirst*; pulse very weak, while the heart beats with great violence.

Calcarea phos.—Child takes no interest in anything; is unable to hold up its head, which is large and heavy; *posterior fontanelle wide open*; ears and nose cold; face pale or sallow; great desire for potatoes and other forms of starchy food.

Kali iod.—Stupor, with irregular and labored breathing; superficial glands enlarged; urine suppressed; pupils dilated; scrofulous constitution.

Apocynum can.—Forehead projecting, sutures open, head enlarged; stupor, with dulness of the senses, especially that of sight; urine scanty or suppressed; *serous exudation*.

Plumbum.—Heaviness of the head from dropsical enlargement; pulse small and frequent, or slow and feeble; emaciation, with trembling of the limbs; somnolence, with mental dulness; *retention or involuntary emission of urine*; *obstinate constipation*; constantly growing weaker and more debilitated.

Zincum.—Small, weak pulse; great prostration; coldness of the body; breathing oppressed; limbs tremble and feel heavy; dulness of the special senses; head enlarged, with great outward pressure; restlessness, especially at night; *vertigo, especially when raised up, with nausea*; constipation.

Auxiliary Treatment.—Hygiene is of great importance in the management of these cases. The head should be supported on pillows, or by some suitable mechanical contrivance, in a comfortable position, and the child exposed daily to fresh air and sunshine. A liberal supply of good, nutritious, easily digestible food should be given to it with regularity. In short, everything possible should be done to strengthen and build up the system.

As for local treatment, it has usually done more harm than good. Tapping appears to have relieved a few cases; but the ordinary result of the measure has been to hasten the fatal termination. Treatment by compression is as cruel as it is senseless, and is now happily abandoned.

PART II.

DISEASES OF THE SPINAL MARROW AND ITS MEMBRANES.

SPINAL HYPERÆMIA.

Synonyms.—Spinal Congestion, Congestion of the Spinal Cord; *Fr.*, *Hypéremie de la Moëlle Épinière*; *Ger.*, *Rückenmarks-hyperämie*; *Spinalhyperämie*.

Definition.—A general or local excess of blood in the spinal cord and its membranes.

Diagnosis.—Spinal hyperæmia is liable to be mistaken for spinal anæmia, myelitis and spinal meningitis. Hyperæmia of the cord is characterized by more or less anæsthesia or numbness, spinal anæmia by its opposite, hyperæsthesia, which is often excessive. The former is always aggravated by the recumbent position, while the latter is ameliorated by it. Myelitis may be distinguished from spinal hyperæmia by the greater intensity of the symptoms, and spinal meningitis by the severity of the symptoms, by the pains produced by movement of the paralyzed limbs, and by the tonic contraction of the muscles, especially those of the back.

Pathology.—The anæsthesia is supposed to be due to pressure upon the white substance of the cord, which is always greatest when the back is in a dependent position; the same is true of the paralysis; while the hyperæsthesia and muscular twitchings are caused, rather, by hyperæmia, and consequent overexcitation, of the gray substance.

Clinical Experience.—The remedies most frequently prescribed for this condition of the cord are: *Rhus tox.*, *Lachesis*, *Silicea*, *Secale* and *Lathyrus sat.* Next in frequency are: *Aconite*, *Gelsemium*, *Nux vom.*, *Argentum nit.*, *Oxalic ac.*, *Colchicum*, *Belladonna*, *Agaricus* and *Rhododendron*.

Therapeutic Indications.—*Rhus tox.*—Aching in the spine, with tingling, numbness and paralytic weakness in the lower limbs, especially when caused by exposure to cold, straining, etc ; aggravated by rest or by lying down.

Lachesis.—Prickling sensation in the limbs; *sinking sensation in the back*; stinging pains in the limbs, with numbness and trembling weakness.

Silicea.—Limbs “go to sleep” easily, are sore, lame and cold ; legs tremble and are very weak; numbness and prickling in both upper and lower extremities; pain and laming soreness in the back, increased in the recumbent position.

Secale cor.—Weakness and numbness in the lower extremities; prickling sensations in the legs and feet; paralysis of the bladder and rectum; *produces such intense congestion of the cord as to destroy its functions.*

Colchicum.—Spinal hyperæmia caused by suppressed perspiration, or by getting the feet wet; numbness of the limbs, with prickling pains; twitching pains in the limbs and side, with sensation of lameness.

Belladonna.—Spinal hyperæmia attended by severe pains in the back, which are increased by lying down.

Agaricus.—Laming numbness and formication in the lower limbs; tingling, prickling sensation in all the limbs; violent pains in the back, worse when standing.

Aconite.—Paralysis from congestion of the cord; crampy, contractive pain in hand and arm; painful bruised sensation in the spine, attended by stiffness and lameness of the back ; trembling weakness in the lower limbs.

Rhododendron.—Paralytic weakness during rest; heavy, weak feeling and formication in back and limbs, worse when at rest, especially when lying down.

Argentum nit.—The pain in the back is relieved by standing; trembling in the lower limbs, as after a fatiguing walk; *nightly pains in the back.*

Berberis vulg.—Numb, bruised feeling in the back, worse when lying ; paralytic feeling in the limbs, with sensation of tingling and prickling in them.

Gelsemium.—Dull, aching pains in the upper part of the

spine, worse after lying down; pains shooting out from the spine to other parts, and sometimes in the opposite direction, causing the patient to cry out; *cerebro-spinal congestions*.

Arnica.—Spinal congestion caused by overexertion, strain or mechanical injury; also when produced by the cold stage of intermittent fever.

Lathyrus sat.—Numbness, followed by paralysis, of the lower extremities; band feeling around the body; patient unable to stand or take a step; sometimes unable to distinguish one limb from the other.

Auxiliary Treatment.—The *hot douche* is one of the best local applications in this disease. The water, at a temperature of about 100° F., should be made to fall from a height of two or three feet over the affected part of the cord for a few minutes every day. Very satisfactory results sometimes follow the systematic administration of the constant current of electricity, by passing it through the affected portion of the spine daily for a few minutes at a time, employing as strong a current for the purpose as the patient can conveniently bear. As soon as the numbness and hyperesthesia disappear, the induced current should be applied to the paralyzed muscles, to excite them to contract.

SPINAL ANÆMIA.

Synonyms.—Anæmia of the Spinal Cord, Anæmia of the Antero-lateral Columns, Spinal Paralysis, Spinal Exhaustion, Myelasthenia, Neurasthenia Spinalis, Reflex Paraplegia, Inhibitory Paralysis, Functional Paralysis of the Cord, Paralysis from Peripheral Irritation; *Fr.*, *Paraplégie Reflexe*; *Paraplégie Functionelle*; *Ger.*, *Reflex Paralysis Spinalis*.

Definition.—A disease characterized by such a general or local deficiency of blood in the vessels of the spinal cord as to impair its functions.

Diagnosis.—Spinal anæmia may be distinguished from spinal hyperæmia, first, by the fact that the symptoms, instead of being aggravated by the recumbent position, are always ameliorated by it; secondly, by the fact that it is not pro-

gressive; thirdly, when the bladder is involved it usually precedes the paralysis. Anæmia of the antero-lateral columns is distinguished from that of the posterior columns by the absence of any considerable disturbances of sensibility, and by the presence of well-marked, though incomplete, paraplegia.

Pathology.—Reflex paraplegia and spinal neurasthenia are believed to be due to spinal anæmia because, there being no visible alterations of structure in these cases, the symptoms admit of no other rational explanation. The irritation is supposed to operate (1) upon certain sensory nerves which transmit the impression to the gray matter of the spinal cord, from which it is reflected (2) either along vaso-motor nerves regulating the caliber of the bloodvessels which supply either (a) the portion of the spinal cord in relation with the paralyzed parts, or else (b) the nerves of the paralyzed muscles themselves. In either case the irritation is supposed to lead to a persistent spasm of certain vaso-motor vessels, so as to cause an anæmic condition of certain vascular territories in the spinal cord, or else of the related nerve-trunks and muscles, and thus, by interfering with the nutrition of the parts, deprive them to a greater or less extent of their functions.

Clinical Experience.—*Nux vom.*, *Phosphorus* and *Strychnia* appear to be the remedies most frequently employed in this disease. *Rhus tox.*, though it sometimes appears to help the paralytic condition, seldom does any permanent good in spinal anæmia. *Arsenicum*, *China* and *Calcarea phos.* are excellent remedies, especially when the disease is associated with general anæmia, or with an impoverished condition of the blood.

Therapeutic Indications.—*Nux vom.*—Great debility of the nervous system, with partial paralysis; *reflex paralysis*; *paralysis from nervous exhaustion*; pain as from a bruise in the small of the back; heaviness and weariness in the lower extremities; *torpor of the liver, stomach and bowels*; paralysis of the bladder.

Phosphorus.—Bruised feeling in the back and limbs; great heaviness and weariness from the least exertion; *spinal neurasthenia*; *extreme mental and physical prostration*.

Strychnia phos.—One of the best remedies we have for anæmia of the cord; *paralysis from exhaustion of the reflex motor power of the spinal nerve-cells.*

Erythroxylon coca.—Sleeplessness and disinclination to work or move; mental depression, with anxiety and palpitation of the heart; loss of appetite; constipation, with abdominal distension; oppression of breathing, arising from debility; fainting fits from nervous weakness; coldness of the extremities; general debility, the least exertion being attended by fatigue.

China.—Paralysis due to general anæmia or *loss of vital fluids*; spinal anæmia following severe and exhausting illness; neurasthenia spinalis induced by overexertion, either bodily or mental; nervous trembling of the lower limbs.

Arsenicum.—Paretic condition of the lower limbs, especially when associated with *general anæmia*; constant disposition to lie down; sensation of weakness in the small of the back; paralytic weakness preceded or accompanied by excessive or watery alvine discharges; trembling of the limbs from debility; restlessness, especially at night; *thirst for small quantities of water*.

Calcarea phos.—Coldness and weakness of the lower extremities from defective circulation of blood in them; *nervous prostration, with great depression of spirits*; face pale and wan; sore, bruised feeling in the back, with desire to lie down upon it.

Kali phos.—Spinal anæmia from exhausting diseases; reflex paraplegia, with burning pains, aggravated by rest, but worst on first moving about.

Alumina.—Paralytic symptoms induced by cold, or when associated with pain in the back; coldness of the surface; weakness and heaviness in the lower extremities; great exhaustion after slight exertions; unrefreshing sleep; weakness of the genito-urinary organs.

Lycopodium.—Great nervous prostration; neurasthenia from spinal anæmia; flatulency; constipation.

Auxiliary Treatment.—Good, nutritious food, such as milk, eggs, beef, etc., and an abundance of fresh air and sunshine, should always be provided. Change of climate and scenery, an ocean voyage, pleasant company, agreeable occupation, etc., are often highly beneficial in these cases. Every

source of peripheral irritation to which the patient is exposed should be removed or guarded against. Whatever benefits the general health will benefit the spine in these cases, and *vice versa*. See *Cerebro-spinal anæmia*.

SPINAL IRRITATION.

Synonyms.—Anæmia of the Posterior Columns of the Spinal Cord, Posterior Spinal Anæmia, Neuralgia of the Spine, Spinal Neuralgia, Rachialgia; *Fr.*, *Rachialgie*; *Ger.*, *Rückgratschmerz*.

Definition.—A condition characterized by a greater or less degree of spinal tenderness, and by a morbid excitability of the nerves proceeding from the affected portion of the cord.

Diagnosis.—Spinal irritation is liable to be mistaken for spinal hyperæmia, hysteria, chronic myelitis and spinal meningitis. In spinal congestion there is, instead of hyperæsthesia, more or less anæsthesia, numbness and formication; and when a sponge, dipped in hot water, is applied to the spine an intense aching is produced, which is not the case in spinal irritation. Chronic myelitis is characterized by anæsthesia, painful muscular contractions and paralysis—symptoms that do not belong to this disease. Spinal meningitis is a far more acute disease than spinal irritation, the hyperæsthesia and pains on motion being very much more severe. Hysteria often resembles spinal irritation so closely as to be mistaken for it; and, indeed, it frequently coexists with it in the same patient. It may be best distinguished by the history of the case.

Pathology.—Hammond and others regard spinal irritation as being essentially an anæmia of the posterior columns of the cord, basing their opinion on the following grounds: 1st, the general condition of the patient is one of debility, a condition which the exciting causes of the disease tend to produce; 2d, the symptoms indicate that the disease is seated in the posterior columns of the cord; 3d, whatever improves the quality of the blood, or increases the amount of it in the spinal vessels, always benefits the patient, and *vice versa*. Of course, it will only apply to those cases in which the nerves of sensibility are

alone affected; when those of the motor sphere are implicated, the antero-lateral columns must be involved. But this view appears to be too exclusive. Some cases are best explained by supposing that the two opposite conditions of hyperæmia and anæmia coexist in different portions of the cord, while in others the symptoms appear to be due to hyperæmia alone. It is generally conceded, however, that in the majority of cases the essential pathological condition is one of anæmia, involving the posterior columns of the cord.

Clinical Experience.—The remedies which have proved curative in this disease are: *Coccus*, *Gelsemium*, *Cimicifuga*, *Strychnia phos.*, *Hypericum*, *Belladonna*, *Tarantula*, *Secale cor.*, *Natrum mur.*, *Tellurium*, *Rhus tox.*, *Ignatia* and *Scutellaria*. In addition to these, the following remedies have benefited particular cases: *Santonine*, *Silicea*, *China*, *Phosphorus*, *Sulphur*, *Zincum met.*, *Calcis hypophos.*, *Piper menth.*, *Naja*, *Veratrum vir.*, *Calcarea carb.* and *iod.*, *Nux vom.*, *Colocynth.*, *Kali hypophos.*, *Agaricus* and *Aconite*.

Therapeutic Indications.—*Coccus*.—Great hyperæsthesia of all the senses, and an exalted susceptibility to impressions; dreadful headaches and sleeplessness; her sufferings are forgotten when her mind is turned away from herself; pain in the lower portion of the spine; stiffness of the neck; palpitation of the heart and oppression of the chest; trembling of the limbs; numbness of the right upper and lower limbs.

Gelsemium.—Stiffness and pain in the back of the head and neck; sleeplessness from soreness and pain in the back; great depression of spirits; extreme weakness and prostration.

Cimicifuga.—Severe aching pain in the lower part of the back and in the occiput, with occasional shooting pains in the chest, and great weakness, amounting almost to paralysis, of the lower extremities; constant nausea and retching on pressure upon the spine, between the fourth and fifth vertebræ; frequent fainting; palpitation on least movement; amenorrhœa; aggravated by cold, movement, and at the menstrual period.

Strychnia phos..—Tenderness on pressure over the dorsal vertebræ; pain, sometimes burning, but chiefly aching, extending frequently to the front of the chest, causing a feeling

of uneasiness and nausea; cold feet, covered with clammy perspiration; insomnia.

Hypericum.—Tenderness of the whole spine; pain in the joints, accompanied by mania; laming-aching in the dorsal region; frightful illusions, screaming if approached; no recollection of the attack; stiches and paroxysms of pain in different parts of the body.

Belladonna.—Pressure over the dorsal vertebræ causes her to cry out and turn pale and nauseated; continual burning pain in the spine; tenderness of the stomach, with nausea and vomiting on eating; pressure on the fourth dorsal vertebra produces a shriek, followed by a dry, violent cough, red face, headache in forehead, photophobia and perspiration.

Tarantula.—A slight touch along the spine causes spasmodic pains in the chest and great distress in the cardiac region; also cardiac disturbances, intense headache and sensation of burning all over the body; muscular contractions; convulsive movements, tremblings and general chilliness.

Secale cor.—Tenderness over the superior spinous processes, with stiffness of the neck; pains radiate from the affected portion of the spine to the chest, producing anxious, oppressed breathing, with palpitations, and tendency to convulsive movements and cough.

Natrum mur.—Sensitiveness of the spine, with pain in the back; eyes sore on pressure; supraorbital neuralgia, with nausea and sensitiveness to bright lights; vision clouded with black spots; hemiopia; sleeplessness; morning headache; anorexia; constipation; restlessness and debility.

Tellurium.—Tenderness of the spine, with extreme sensitiveness to pressure; patient so sensitive and irritable as even to dread the approach of any one.

Rhus tox.—Violent pain in the head and down the back, with extreme sensitiveness of the spine to pressure; lies on her back with the head and spine drawn backward; the slightest touch or movement causes extreme pain; anxious, oppressed breathing, with violent palpitations, occurring in paroxysms; complete sleeplessness.

Ignatia.—Aching pain as if bruised in the cervical and

dorsal portions of the spine; lancinating pain in the nape of the neck, also in the small of the back, extending through the loins; pains increase by pressure over the spine; cases complicated with hysteria.

Auxiliary Treatment.—The Weir Mitchell treatment of *absolute rest*, combined with gentle galvanization of the spine by the constant current, positive pole below, negative above, is perhaps the best local treatment, in most cases, when it can be rigidly carried out; but where reflex excitations to distant parts, causing palpitations, neuralgia, congestion and engorgement of pelvic and abdominal organs, etc., are due to engorgement of the cord, rather than to anæmia, *cold to the spine* is found to be eminently remedial. Other cases, on the contrary, are benefited by *hot water to the spine*. The diet should in all cases be generous.

SPINAL HÆMORRHAGE.

Synonyms.—Hæmorrhage into the Spinal Cord or its Membranes, Spinal Apoplexy, Hæmorrhagia Medulla Spinalis, Hæmatomyelia; *Fr.*, *Hémorrhagie Intrarachidienne*, *Hématoxyèle*, *Apoplexie de la Moëlle Épinière*; *Ger.*, *Rückenmarks-apoplexie*.

Definition.—Hæmorrhage into either the substance of the cord or into its membranes, to which latter variety most cases of spinal hæmorrhage belong.

Diagnosis.—Usually, the chief reliance must be upon the history of the case, the existing symptoms affording but few diagnostic marks. When, however, paraplegia occurs suddenly, and is the result of an accident, we shall generally be warranted in attributing the paralysis to spinal hæmorrhage.

Pathology.—When effused into the substance of the cord, the clot, which is almost invariably seated in the gray matter, shows a greater tendency to extend in the course of the long axis of the cord than laterally, and varies in length from half an inch or less to several inches, sometimes involving the entire central portion of the cord. In the meningeal variety the blood is generally extravasated between the bones

and the dura mater, but very rarely it is effused into the pia mater, where it more or less compresses the cord and produces the anaesthesia and motor paralyses observed in such cases. When the extent and situation of the haemorrhage are such as to cause irritation instead of compression, the effect is to produce hyperaesthesia and spasm.

Clinical Experience—*Hypericum*, *Arnica* and *Calendula* are given after severe injury to the spine followed by numbness and paralysis, with a view to promote the absorption of any clot which may have formed and is causing compression. *Secale cor.* is given to prevent further effusion by contracting the spinal bloodvessels.

Therapeutic Indications.—These are given under the heads of *cerebral haemorrhage*, *spinal paralysis* and *anaesthesia*, which see.

Auxiliary Treatment.—Whenever there is reason to apprehend the existence of spinal haemorrhage, ice should be applied to the spine and the patient made as quiet and comfortable as possible. Absolute rest is essential, not only to prevent further effusion of blood, but to render the consequences of the haemorrhage as light as possible.

SPINAL MENINGITIS.

Synonyms.—Inflammation of the Spinal Meninges, Meningitis Spinalis; *Fr.*, *Méningite Spinale*. (1). DURA MATER: Spinal Pachymeningitis; *Fr.*, *Pachyméningite Spinale*; (2). ARACHNOID: Spinal Arachnitis; *Fr.*, *Arachnite Spinale*; (3). PIA MATER: Spinal Leptomeningitis; *Fr.*, *Leptoméningite Spinale*; *Ger.*, *Rückenmarkshautentzündung*.

Definition.—Inflammation involving one or more of the membranes of the cord. As it is usually limited to the soft membranes, it is immaterial whether we call the disease spinal meningitis or spinal leptomeningitis.

Diagnosis.—The diagnosis of spinal meningitis, either acute or chronic, depends upon the presence of the following symptoms: (1) pains in the back and limbs, greatly aggravated by every movement of the spine; (2) muscular rigidity

similar to, but less severe and general than, that of tetanus; (3) hyperæsthesia and increased reflex excitability; and (4) retention of urine and fæces, followed by more or less paralysis, anæsthesia and incontinence of urine and fæces. The absence of cerebral symptoms is sufficient evidence that the disease is not tubercular.

Clinical Experience.—The remedies which appear to stand the highest in the treatment of this disease are: *Aconite*, *Belladonna*, *Bryonia* and *Nux vom.* Others which have received clinical indorsement are: *Rhus tox.*, *Causticum*, *Plumbum*, *Hypericum*, *Cuprum*, *Veratrum vir.*, *Mercurius*, *Secale cor.* and *Oxalic ac.*

Therapeutic Indications.—*Aconite*.—High fever, with boring pain in the spine, increased on motion; painful stiffness in the dorsal region, extending to the neck; numbness extending from the small of the back into the lower limbs; formication in the arms; spasms caused by spinal inflammation; insensibility and coldness of the hands and feet; the arms hang powerless, as if paralyzed.

Belladonna.—Lancinating pains in the vertebræ, resembling stabs with a knife; tonic muscular contractions; cramplike pain in the middle of the spinal column; painful stiffness in the back of the neck; intense dyspnoea, as if the chest were violently compressed; complete or incomplete paralysis, with or without incontinence of urine.

Bryonia.—Sticking pains in the back on the slightest movement of the spine; *promotes absorption of serous effusion*, and thus relieves paralysis from compression; sticking pains in the chest, with fever.

Nux vom.—Violent pains in the back, especially in the dorsal and lumbar regions; pains extending from the back to the sternum, producing shortness of breath; pains aggravated by movement; *hypochondriac and epigastric regions sensitive to pressure*; numbness and weakness of the arms and legs; retention of urine; constipation.

Hypericum.—Fever, with wild, staring looks, hot, bloated face, thirst and white-coated tongue; painfulness of the back from injury to the spine, greatly increased by any movement

of the body ; *the slightest movement of the spine extorts cries* ; the cervical vertebrae sensitive to the touch ; spells of short, hacking cough and difficult breathing ; desire for warm drinks.

Plumbum.—Chronic cases, attended with *frequent attacks of violent colic*, with retraction of the abdominal walls ; paralyzed parts greatly emaciated ; limbs become painfully contracted ; coldness and paralysis of all the limbs, especially of the lower ; extreme constipation.

Cuprum.—Suffocative breathing from spasm of the respiratory muscles ; rigidity, with painful contractions of the limbs, toes and fingers ; excessive weakness, especially in the lower extremities ; painful jerkings in various parts of the body and limbs ; paralysis, with incontinence of urine.

Rhus tox.—High fever from getting wet, or from repercuSSION of an exanthem ; numbness, and loss of sensibility and power of motion in the limbs ; formication ; dyspnoea ; inflammation following concussion of the spine.

Secale cor.—Spinal meningitis, attended with suppression of urine ; spasms, followed by paralysis, numbness and insensibility.

Mercurius.—Violent pain in the spine, aggravated by motion ; great restlessness and sleeplessness at night, or when warm in bed ; paralysis of the lower limbs, bladder and rectum ; anaesthesia of the skin ; occasional jerks in the paralyzed parts.

Physostigma.—Spinal meningitis, with tetanic spasms ; back very weak ; stiffness and pain all along the spine, with inclination to bend forward ; stiffness of the neck, with feeling of drawing and tension.

Stramonium.—Constant pain in cervical and upper dorsal regions of the spine, which is sensitive to the touch ; sudden jerks through the body ; tonic spasms, with consciousness unaffected ; *muscles will not obey the will* ; trembling contractions.

Cicuta.—Violent spasmotic pains in the paralyzed lower limbs ; trembling of the limbs during remission ; painful stiffness in the muscles ; frequent involuntary jerking and twitching in the limbs, followed by paralysis ; feeling of soreness in many parts of the body.

Kali iod.—Constant violent pain in the small of the back ;

spasmodic contraction of the muscles; fever, with excessive thirst; burning sensation at the pit of the stomach; *great desire to go into the open air*; paralysis of the lower extremities.

Auxiliary Treatment.—Ice to the spine usually gives most relief in acute cases, especially to the pains. Chronic cases are benefited by the primary galvanic current and by the electro-cautery. The patient should lie on his side or face, on a comfortable spring mattress, in a large, quiet, airy room. Animal broths, soups, milk, eggs and other nutritious articles of food should constitute the diet, strengthened, when required, by a moderate allowance of stimulants. Bed-sores should be prevented as long as possible, and after they have formed they should receive careful attention. A mild current of electricity passed daily through the affected parts will often cause them to heal. Great care should also be taken to relieve the bladder and rectum, especially after paralysis has occurred.

MYELITIS.

Synonyms.—Inflammation of the Spinal Cord, Inflammatory Softening of the Cord, Myelitis Acuta; *Fr.*, *Myélite, Inflammation de la Moëlle Epinière, Ramollissement de la Moëlle Épinière; Ger.*, *Rückenmarksentzündung, Erweichung des Rückenmarks.*

Definition.—An acute inflammation of the whole, or of any part, of the substance of the spinal cord.

Diagnosis.—The history of the case, especially in traumatic injuries, is often sufficient of itself to determine the diagnosis. The disease may also be distinguished from other affections of the spine by the characteristic symptoms of the disease, such as the “band feeling” about the body and the rapid development of paraplegia, together with the reflex phenomena of pain and convulsive movements.

Pathology.—The essential pathological feature of acute myelitis consists in hypertrophy of the neuroglia, and consequent atrophy or degeneration of the nervous elements of the cord, resulting finally in inflammatory softening, or else in sclerosis.

Clinical Experience.—The remedies most frequently em-

ployed in myelitis are: *Aconite*, *Gelsemium*, *Belladonna* and *Mercurius* in recent cases; and *Arsenicum*, *Plumbum*, *Oxalic ac.* and *Strychnia* in chronic cases. *Arnica*, *Hypericum*, *Rhus. tox.* and *Sulphur* are most frequently given in traumatic cases.

Therapeutic Indications.—*Aconite*.—Acute cases, attended with high fever, spasms, numbness, formication, icy coldness of hands and feet. Push the remedy to the extent of producing a profuse perspiration.

Gelsemium.—Cerebro-spinal symptoms, such as confusion of the head, extending from the occiput to the forehead; paresis of tongue and glottis; pains in the back of the head and spine, with pains darting laterally from the latter to other parts; spinal exhaustion; loss of voluntary motion; incontinence of urine; *myelitis involving the anterior horns of gray matter*.

Belladonna.—Both acute and chronic cases, where there are pains in the back, with weakness and weariness; paralysis of the ocular muscles and iris; partial or general paralysis; dyspnoea; tonic and clonic spasms; chronic cases caused by retrocession of eruptions.

Mercurius.—Great restlessness and sleeplessness, especially at night; pains in the spine, violent, and worse from motion; paralysis and anaesthesia of the lower limbs; occasional jerking in the paralyzed muscles.

Plumbum.—Chronic cases, especially when attended by colicky pains; painful tonic contractions; paralyzed parts become greatly emaciated; dyspnoea from hyperaesthesia of the intercostals; atrophy of the muscular tissues; extreme constipation.

Arsenicum.—Chronic cases attended by great dyspnoea and anxiety; twitching, trembling, violent starting and weariness in the limbs; tetanic spasms; great restlessness, especially at night, with sleeplessness.

Angustura.—Twitching and jerking along the back like electric shocks; tonic contraction of the muscles of the jaw; bruised pain in the dorsal region, or in the muscles of the neck; tension of the facial muscles; tremulous stitches in the thighs.

Secale cor..—Violent pains in the back, especially in the sacral region; muscular twitching and jerking in the limbs; tingling

in the back, extending to the fingers and toes; painful contraction of the flexor muscles; paralysis and anaesthesia of the limbs; especially indicated in cases complicated with spinal meningitis.

Causticum.—Lancinating pains in the back, arresting the breathing; numbness and insensibility of the fingers and toes, with ice-cold sensation and tendency to cramp.

Veratrum alb.—Aching and sticking pains in the back; tingling in the hands; painful jerking in the limbs; cramps in the legs; paresis.

Arnica.—Subacute and chronic cases of traumatic origin; should be given previous to the setting in of the degenerative process.

Phosphorus.—Chronic cases resulting from sexual excesses, or where there is a *tubercular condition of the system*; paroxysmal pains in the back, with paralytic weakness; dyspnoea, with sensation as if the chest was oppressed by a load resting upon it.

Pieric ac.—Tonic and clonic spasms; *extreme weariness and exhaustion*; tendency to *softening of the cord*; great chilliness, can't get warm; *sensation of worms crawling over the ears*; paralysis.

Oxalic ac.—Limbs stiff, numb, weak, heavy, powerless; muscular twitchings; acute pain in the back, with numbness and weakness, extending to the limbs; pains excited and aggravated by movement; they are usually *like short stitches, confined to a small spot*, and lasting only a few seconds.

Auxiliary Treatment.—This is similar to that recommended under the head of *spinal meningitis*, which see. Kafka also advises the spray douche, frequently repeated, to the spinal column.

MYELOMALACIA.

Synonyms.—Softening of the Spinal Cord, Simple, White, Non-inflammatory Softening, Mollities Medullæ Spinalis; Fr., *Ramollissement de la Moëlle Épinière*; Ger., *Erweichung des Rückenmarks*.

Definition.—A primary, non-inflammatory, and apparently idiopathic, softening of the spinal cord.

Diagnosis.—The condition, in striking contrast with every other affection of the cord, is best known by its negative symptoms, there being no pains or exalted sensibility, nor any muscular twitchings, spasms or contractions, even when the whole structure of the cord is involved in the process.

Pathology.—Some writers still adhere to the old notions concerning softening of the cord, regarding as inflammatory not only the forms resulting from the so-called acute central myelitis and myelitis diffusa, but also the large class of primary softenings, due chiefly to vascular disturbances, and which belong to the degenerative type of diseases. Even secondary degenerations of the cord are sometimes classed as inflammatory, notwithstanding the fact that hyperplasia of the neuroglia subsequently sets in, giving rise to sclerosis. There is, however, but one true form of inflammatory softening, namely, that resulting from acute myelitis. All others belong to the category of non-inflammatory softenings, and constitute the simple white softening known as myelomalacia, in which the tissues of the cord are found to have undergone fatty and granular degeneration, the constituents consisting chiefly of oil-globules, *debris* of nervous matter, and broken-down connective tissue. (Further information on this subject may be obtained by consulting the author's article on "Diseases of the Nervous System" in *Arndt's System of Medicine*, Vol. II, pp. 610, 614.)

Clinical Experience.—All the clinical experience we have on this subject is given under the head of *myelitis*, which see. *Picric ac.* will produce softening of the cord, but whether it is capable of restoring the degenerated cord to a state of integrity is another question, and remains to be proved.

Therapeutic Indications.—These are given under the heads of *spinal hyperæmia*, *myelitis* and *spinal paralysis*, which see.

Auxiliary Treatment.—Hopeless as may be the case, so far as a cure is concerned, much may be done toward rendering the patient more comfortable and prolonging his life.

Thus, the weakened cord should be guarded against any further injury by carefully avoiding any sudden jar or fall; bed-sores should be prevented or promptly and methodically treated; and the bladder should be emptied with regularity, either spontaneously or, as will generally be required, by means of the catheter. Passive exercise in the open air should be taken as long as practicable; and in no case should the patient be unnecessarily deprived of fresh air and sunshine, which are no less essential to his support than good and wholesome food.

SPINAL PARALYSIS.

Synonyms.—Paralysis of the Spine, Spinal Palsy, Paraplegia, Paraplexia; *Fr.*, *Paraplégie, Paralysie Spinale*; *Ger.*, *Paralysis Spinalis, Spinalparalysie, Spinallähmung*.

Definition.—Paralysis of the lower extremities, with or without paralysis of the lower part of the trunk, bladder and rectum.

Diagnosis.—There are three distinct forms of organic paralysis depending on the seat of the disease, namely, the *hemiplegic* or cerebral, the *paraplegic* or spinal, and the *general* or cerebro-spinal. To these may be added the *reflex* or *peripheral*, which usually assumes the paraplegic form, and may be known partly by the absence of the distinctive symptoms of organic paralysis, and partly by the rapid improvement which usually attends the removal of the irritation which causes it.

Pathology.—The pathological changes which characterize the various forms of organic paraplegia will be given in the succeeding articles treating of the different varieties of spinal paralysis, which see. Toxic and reflex paraplegias exhibit no pathological alterations, being simply due to vaso-motor spasm caused by disease or injury of remote organs, without any appreciable evidences of organic disease in the cord or its membranes.

Clinical Experience.—Reserving for special mention under their appropriate heads the clinical experience pertaining to the several forms of organic paraplegia, we shall here give only what relates to the toxic and reflex varieties, viz.:

(a) TOXIC PARALYSIS.

When caused by lead poisoning: Kali iod., Opium, Cupr., Plat.

When caused by mercury: Nitric ac., Sulph., Hepar sulph., Stram., Staph.

When due to arsenical poisoning: Ferr., Chin., Hepar sulph., Nux vom., Graph.

(b) REFLEX PARALYSIS.

When caused by worms: Cina, Santonine, Tereb., China, Ign., Cicuta.

When due to dental irritation: Cham., Bell., Gels., Acon., Hyos., Stram., Cupr., Ign., Cicuta.

When produced by intestinal irritation: Merc., Arsen., China, Phos. ac., Baptis., Ipec., Verat., Calc.

When due to genito-urinary irritation: Bell., Apis, Canth., Dulc., Equise., Hyos., Gels., Lycop., Cactus.

When caused by diphtheria: Gels., Arsen., Natr. mur., Rhus tox., Lach., China, Phos., Kali phos., Nux vom., Ferr.

When caused by cold or dampness: Dulc., Gels., Rhus tox., Apis, Verat., Bell.

When due to external injury: Arnica, Hyper., Cicuta, Rhus tox., Sulph.

When caused by pleurisy or pneumonia: Bry., Phos., Tartar emet., Sang., Sulph.

When due to sexual excesses: Helonias, Agnus cast., Phos., Nux vom., China, Pic. ac., Nit. ac., Dios., Sarsap., Aurum, Sepia.

When due to exhausting diseases: China, Phos., Arsen., Zinc. phos., Pic. ac., Calc., Carbo veg., Phos. ac., Nux vom., Calc. hypophos.

Therapeutic Indications.—These will be found under the various forms of paralysis hereafter to be described. See, also, *spinal meningitis*, *myelitis*, *locomotor ataxia* and *spinal concussion*.

ACUTE ASCENDING PARALYSIS.

Synonyms.—Acute Progressive Paralysis, Landry's Paralysis, Paralysis Ascendens Acuta ; *Fr.*, *Paralysie Ascendante Aiguë* ; *Ger.*, *Paralysis Ascendens Acuta*.

Definition.—An acute disease of the spinal cord, characterized by a rapidly progressive paralysis, and unattended by any appreciable lesion.

Diagnosis.—This disease may be distinguished from the "acute spinal paralysis of adults," and also from subacute forms of spinal paralysis, (1) by the absence of rapid muscular atrophy, and (2) by the fact that the electrical excitability of the muscles is unimpaired. Moreover, the disease is regularly progressive in its character, in which respect it differs from acute spinal paralysis, where the impairment of muscular power occurs simultaneously in every part affected.

Pathology.—No pathological changes, not even hyperæmia, have yet been discovered after death by this disease, either in the cord or in its membranes. The disease is supposed to be due to some peculiar disturbance of nutrition.

Clinical Experience.—*Aluminum met.*, *Ledum*, *Coccus* and *Gelsemium* occupy the first rank in this disease, and *Phosphorus*, *Rhus tox.*, *Nux vom.* and *Secale cor.* the second.

Therapeutic Indications.—*Aluminum met.*—While the paralysis is confined to the lower limbs, or when there is so much heaviness of the legs that the patient is scarcely able to lift them, or when they are so weak that he is obliged to sit down, and experiences great weariness even when sitting ; staggers in walking ; numbness of heel and pain in the sole of the foot when stepping ; constant inclination to lie down.

Ledum.—Paralysis ascending from the feet upward ; pains in the soles of the feet when walking ; sensation as if the posterior muscles of the thighs were paralyzed.

Coccus.—Paraplegia occurring in debilitated nervous persons, and where the circulation is impeded or sluggish ; general sense of prostration from paralysis of organic life ; sense of constriction through the whole spine.

Gelsemium.—General sense of helplessness, arising from the

muscles not obeying the will-power of the patient; *complete relaxation of the whole muscular system*; pain in the back of the head and neck; dimness of vision; great drowsiness.

Pieric ac.—I believe this to be the nearest similium we have; the great sense of prostration and the acuteness of the symptoms appear to call for it, but it should be used comparatively high; it ought to cure in the 30th potency.

Nux vom.—Paretic condition, in which the power of voluntary motion is not wholly lost; feeling of great weakness, especially in the back; staggers in walking, and sometimes falls; paralyzed parts numb and cold; paralysis from exhaustion of the spinal cord; drags his feet in walking.

Rhus tox.—Paraplegia attended with painful stiffness, tingling and numbness in the paralyzed limbs; pain in the back ameliorated by lying on something hard; paralysis of the rectum and bladder, as well as of the lower extremities.

Phosphorus.—Where the paralysis seems to depend on perverted nutrition; pains in the soles of the feet, with sensation as if they were asleep; insupportable pains in the spine, preventing walking; partial contraction of the affected muscles, with formication and tearing pains.

Secale cor.—Severe spinal pains, especially in the sacral region; paralysis of the lower sphincters; *destroys the activity of the cord*.

Auxiliary Treatment.—The majority of cases are so acute that but little good can be expected of accessory treatment. The constant galvanic current to the spine may, however, prove to be of some benefit, if methodically applied.

SPINAL PARALYSIS OF ADULTS.

Synonyms.—Atrophic Spinal Paralysis, Inflammation of the Anterior Horns, Poliomyelitis Anterior; *Fr.*, *Paralysie Spinale Atrophique, Paralysie Spinale de l'Adulte*; *Ger.*, *Spinallähmung bei Erwachsenen, Poliomyelitis Anterior*.

Definition.—A peculiar form of paralysis in the adult, acute, subacute or chronic, resulting from inflammation and degeneration of the gray matter of the anterior horns of the

spinal cord, and followed by more or less atrophy of the paralyzed muscles.

Diagnosis.—The regressive character of the muscular weakness and paralysis, almost, if not wholly unattended by febrile symptoms, but accompanied by wasting of the limbs, by abolition of the patellar tendon reflex, and by sensations of numbness, yet without loss of tactile sensation, and without paralysis of the bladder or rectum, will render the diagnosis clear and indisputable. It may be distinguished from that form of peripheral neuritis which is attended by paralysis and muscular atrophy, by means of the following table:

Poliomyelitis.	Peripheral Neuritis.
Disease usually begins suddenly.	Sets in gradually.
Paralysis regressive. Involves at the start all the members affected, some parts quickly recovering.	Paralysis progressive. Involves different members, generally in the nature of an ascending palsy.
Usually no pain. May be general hyperesthesia at the beginning.	Pain is usually continuous; especially marked upon handling, and involves certain nerves.
Muscles not sensitive to pressure.	Muscles sensitive to pressure.
No recovery after the disease has lasted some time.	Perfect recovery may take place after the paralysis and atrophy have lasted a long time.

Pathology.—The pathological changes in the cord are chiefly confined to the anterior horns of gray matter, and consist in atrophy and yellow pigmentation of the motor nerve-cells, and in centres of softening, showing that the disease is essentially a myelitis. Whether, as Hammond supposes, the muscular atrophy is due to the destruction of trophic cells in the cord, of the existence of which we have no other evidence, or whether, with Charcot, we refer it to atrophy of the motor cells alone, there can be no doubt of its dependence on the spinal affection, which is always associated with it.

Clinical Experience.—The remedies which seem to have done the most good in this disease are: *Gelsemium*, *Belladonna*, *Aconite*, *Phosphorus*, *Strychnia*, *Rhus tox.* and *Argentum nit.*

Therapeutic Indications.—These have already been given under the head of *myelitis*, which see. Consult, also, *spinal hyperæmia*, *spinal meningitis* and *progressive muscular atrophy*.

Auxiliary Treatment.—After the inflammatory process has been arrested, the paralyzed and atrophied muscles should be stimulated to contract by the methodical application of *electricity*. *Massage* is also useful in these cases, especially the *electro-massage* of Dr. Butler.

INFANTILE SPINAL PARALYSIS.

Synonyms.—Essential Paralysis of Childhood, Antero-spinal Paralysis of Infancy; Fr., *Paralysie Essentielle de l'Enfance*, *Paralysie Atrophique Graisseuse de l'Enfance*; Ger., *Spinale Kinderlähmung*.

Definition.—An acute disease of the spinal cord in children, characterized by the three successive stages of fever, muscular paralysis and atrophy.

Diagnosis.—The fact that progressive muscular atrophy sometimes attacks children has led occasionally to the mistake of confounding it with this disease, from which it may be differentiated as follows:

Infantile Spinal Paralysis.	Progressive Muscular Atrophy.
Causes unknown.	Heredity in some cases; in others, exposure to wet and cold and excessive muscular exertion.
Patients, infants and children.	Mostly adults.
Always acute.	Always chronic.
The paralysis appears first, and is followed later by muscular atrophy.	The atrophy appears first, and the muscular weakness and paralysis depend upon its extent.
Course of the atrophy stationary or regressive.	Always progressive.
Electrical reaction corresponds to the degeneration of the cord.	Electrical irritability altered according to the extent of the muscular atrophy.

Pathology.—As in spinal paralysis of adults, the essential lesion in this disease is found to be situate in the anterior

horns of gray matter, and to consist of a myelitis, which results in an atrophy of the part affected, a degeneration of its structure and a disappearance of its cell-elements.

Clinical Experience.—*Gelsemium, Rhus tox., Belladonna, Atropine, Nux vom., Strychnia* and *Cocculus* are preferred in the more acute, and *Phosphorus, Secale cor.* and *Plumbum* in the less acute cases.

Therapeutic Indications.—These have already been given under the head of *myelitis*, which see. Consult, also, *spinal hyperæmia, spinal meningitis* and *progressive muscular atrophy*.

Auxiliary Treatment.—Dr. Mossdorf claims to have treated a large number of cases successfully with the descending current of central galvanization of the spinal cord. In some cases over one hundred applications were made before motility was restored. So long as the paralyzed muscles retain their electro-contractility the treatment by electricity may be made effective. The number of cells to be used is best determined by trial. The positive electrode should be placed over the nerve-trunks supplying the atrophied muscles, and the negative upon the affected muscles themselves, interrupting the current from time to time by slowly lifting and replacing the negative sponge.

Should the physician be called during the acute or inflammatory stage, the cold douche, frequently applied to the spine, will be of benefit.

PSEUDO-HYPERTROPHIC SPINAL PARALYSIS.

Synonyms.—Pseudo-Hypertrophic Muscular Paralysis, Lipomatosis Musculorum Luxurians, Atrophia Musculorum Lipomatosa; Fr., *Paralysie Pseudo-Hypertrophique, Paralysie Myosclérosique, Paraplégie Hypertrophique de l'Enfance*; Ger., *Muskel-atrophie mit Interstitieller Lipomatose*.

Definition.—A progressive paralysis, belonging almost exclusively to infancy and childhood, caused by inflammation of the anterior tract of gray matter of the spinal cord, in which certain muscles appear to be hypertrophied, although the ultimate fibres of the affected muscles atrophy.

Diagnosis.—The gradually advancing paralysis of the lower extremities, accompanied by an enlargement of the gastrocnemii muscles, and afterward of those of the thigh and gluteal region, will serve to distinguish it from every other affection.

Pathology.—The pathological changes in the cord consist in atrophy and disintegration of the nerve-cells of the anterior horns, and sclerosis of the lateral columns. The muscular hypertrophy appears to be due to proliferation of the adipose and connective tissues, probably in consequence of morbid nutrition.

Clinical Experience.—*Argentum nit.* and *Phosphorus* are the only two remedies that have so far proved to be of any special value in this disease.

Therapeutic Indications.—These will be found under the heads of *myelitis* and *spinal sclerosis*, which see. Consult, also, *spinal hyperæmia* and *progressive muscular atrophy*.

Auxiliary Treatment.—Duchenne is said to have cured two cases of this disease with the induced current, but others have not been so fortunate. Improvement, however, has followed the application of the primary current to the spine and the faradaic current to the affected muscles; in one case even where there were extreme atrophy of the extremities and absolute loss of muscular contractility to both currents, until after many weeks of constant effort there was produced a slight reaction, followed by increasing improvement up to approximate recovery.

GLOSSO-LABIO-LARYNGEAL PARALYSIS.

Synonyms.—Duchenne's Disease, Labio-Glosso-Pharyngeal Paralysis, Progressive Glosso-Labio-Laryngeal Paralysis, Progressive Bulbar Paralysis, Myelitis Bulbi; *Fr.*, *Paralysie Glosso-Labio-Laryngée*; *Ger.*, *Progressive Bulbarparalysie*.

Definition.—An acute or chronic, progressive and symmetrical paralysis of the lips and adjacent facial muscles, of the tongue, pharynx, and sometimes of the larynx, with or without conspicuous muscular atrophy.

Diagnosis.—Progressive muscular paralysis sometimes

resembles this disease, especially when the tongue is first involved, but that affection seldom commences in these parts, and never until after atrophy has set in. Facial paralysis might be carelessly mistaken for this disorder, but facial paralysis is confined to the parts animated by the facial nerve, whereas in this disease only the muscles of the lower part of the face are affected.

Pathology.—The microscope shows that there is degeneration of the ganglion-cells in the motor nuclei of the hypoglossus, portio-dura, spinal accessory and pneumogastric nerves, the nucleus of the cell being destroyed and its place supplied by numerous brown granules. Chronic sclerosing myelitis has also been observed at the points of origin of these nerves, in the medula oblongata and upper part of the spinal cord, the nerve fibres being reduced in size and number, their contents in a state of fatty and granular degeneration, and the cylinder axis either atrophied or hypertrophied. The wasting of the ganglion cells is not always in proportion to the atrophy of the affected muscles, a fact which Duchenne and others attempt to explain by supposing that the ganglion cells in the motor nuclei are partly motor and partly trophic.

Clinical Experience.—*Anacardium* and *Argentum nit.* are said to have cured bulbar paralysis, but I am obliged to confess that I have obtained but little benefit from either of these remedies in this formidable complaint. *Baryta* and *Phosphorus* have also been recommended. I recently had an opportunity of trying *Plumbum*, and for a time it seemed to arrest the progress of the disease, but finally neither it nor any other remedy seemed to do any material good. I am strongly of the opinion, however, that if the remedy had been given from the time the disease first made its appearance it would have proved more effective.

Therapeutic Indications.—These will be found under the heads of *myelitis* and *posterior spinal sclerosis*, which see.

Auxiliary Treatment.—But little can be done, in the way of accessory treatment, to benefit the patient. *Electricity*, though unsuccessful as a curative agent, has seemed to do some good in lessening the suffering, especially in relieving

the sense of constriction in the throat and chest. The food, which should be both nourishing and easily digestible, requires to be reduced to a semi-solid condition before any attempt is made at swallowing it.

PROGRESSIVE MUSCULAR ATROPHY.

Synonyms.—Wasting Palsy, Myopathic Paralysis, Amyotrophic Paralysis, Cruveilhier's Atrophy, Progressive Poly-myositis, Paralysis Atrophica; *Fr.*, *Atrophie Musculaire Graisseuse Progressive, Paralysie Musculaire Progressive Atrophique*; *Gr.*, *Muskelerkrankung, Muskellähmung*.

Definition.—A chronic wasting and degeneration of the muscular tissue, more especially of the muscles of the extremities, in consequence of which there is a corresponding loss of motor power.

Diagnosis.—Progressive muscular atrophy is not easily mistaken for any other disease, as its slow progress and successive implication of certain muscles and groups of muscles is very characteristic. There are forms of paralysis complicated with muscular atrophy, but in these cases the paralysis precedes the atrophy, while in progressive muscular atrophy the paresis, for it is mainly muscular weakness rather than paralysis, accompanies and keeps pace with the wasting of the muscles.

Pathology.—The disease does not originate, as was formerly believed, in the muscles themselves, but in structural changes in the spinal cord. These changes consist chiefly in atrophic degenerations of the ganglion cells of the anterior horns of the gray matter from where the motor roots emerge which preside over the nutrition of the affected muscles. The muscular atrophy, though sometimes consisting only of simple atrophy without degeneration, is in the majority of cases accompanied by the fatty and granular forms of muscular degeneration, and in others by the waxy or vitreous. When the muscles of the face are involved, it gives rise to the affection known as labio-glosso-laryngeal paralysis. (For further information on this subject consult the author's work on *Diseases of the Nervous System*, p. 179, *et seq.*)

Clinical Experience.—The remedies mostly to be relied upon in this disease are: *Plumbum*, *Phosphorus*, *Picric ac.*, *Arsenicum*, *Sepia*, *Argentum nit.*, *Cuprum* and *Lachesis*. The following have also been recommended: *Physostigma*, *Sulphur*, *Nux vom.*, *Belladonna* and *Strychnia*.

Therapeutic Indications.—These will be found under the heads of *myelitis* and *posterior spinal sclerosis*, which see.

Auxiliary Treatment.—The chief dependence is on central galvanization, with persistent and methodical Faradization and galvanization of the affected muscles.

AMYOTROPHIC LATERAL SCLEROSIS.

Synonyms.—Inflammation of the Lateral Columns, and of the Anterior Tract of Gray Matter, of the Cord; *Fr.*, *Sclérose Latérale Amyotrophique*; *Ger.*, *Amyotrophique Lateral-sklerose des Rückenmarks*.

Definition.—A form of spinal sclerosis in which the lateral columns of the cord are symmetrically sclerosed, and the anterior horns of gray matter symmetrically atrophied and degenerated, and which, beginning in the cervical portion of the cord, extends to the lumbar region, and finally proves fatal by implicating the medulla oblongata.

Diagnosis.—Amyotrophic lateral sclerosis differs from the spinal paralysis of adults, to which it bears some resemblance, not only by the greater intensity of its symptoms, but by the existence of both fibrillary twitching and spasmodic contractions of the limbs, neither of which occurs in the latter disease. As for progressive muscular atrophy, of which it was formerly supposed to be a peculiar form, the muscular atrophy is never preceded by paralysis, as in amyotrophic lateral sclerosis; neither do spasmodic contractions occur in it, as they do in this disease.

Pathology.—“I propose,” says Charcot, who first separated this disease pathologically from progressive muscular atrophy, “to call that disease in which the two systems of the pyramidal fasciculi are affected, both in the cord and in the medulla oblongata, *amyotrophic lateral sclerosis*; only the lesion cannot

be followed upward ordinarily beyond the cerebral peduncle. The alteration reacts on the gray substance of the anterior cornua of the cord and on the analogous gray parts of the medulla oblongata; and it follows two methods. In certain regions it is a destructive lesion of the cellular elements. The consequence is, then, an atrophy of the muscles which are in relation with the nerves emanating from the diseased gray substance. In other parts it is a simple irritative functional lesion of the ganglionary elements. As a result, in the parts, besides the paralysis more or less pronounced, there is a notable exaggeration of the tendinous reflexions, and even, at a certain moment, a considerable contracture, occasionally, of the members. The contracture or, in its absence, the exaggeration of the tendinous and muscular reflexions distinguishes clinically, according to my observation, this form of spinal muscular atrophy from that in which the cellular elements are destroyed without any participation of the white fasciculi."

Clinical Experience.—I am not able to give any satisfactory clinical experience pertaining to this disease, though what is said under this heading in regard to *progressive muscular atrophy* applies equally to this affection.

Therapeutic Indications.—These, so far as our present knowledge of the disease enables us to give them, will be found under the head of *posterior spinal sclerosis*, which see.

Auxiliary Treatment.—We can add nothing of value to what has been said under this heading in the preceding article.

MULTIPLE SPINAL SCLEROSIS.

Synonyms.—Disseminated Spinal Sclerosis, Insular Spinal Sclerosis, Disseminated Multilocular Sclerosis; *Fr.*, *Sclérose en Plaques Disséminées*; *Ger.*, *Multiple Sklerose des Rückenmarks*.

Definition.—A form of spinal sclerosis characterized by the presence of scattered patches of sclerosed tissue in the antero-lateral columns of the spinal cord, but not often confined to them.

Diagnosis.—When the disease is confined to the lateral

columns of the cord there is nothing to distinguish it from the symmetrical form of spinal sclerosis next to be described, and when the posterior root-zones are implicated the symptoms are similar to those of posterior spinal sclerosis or locomotor ataxia; consequently it is impossible, in the present state of our knowledge, to diagnose the disease with certainty, unless the symptoms of both these conditions should happen to be united in the same case.

Pathology.—The distinctive pathological feature of this disease is the existence of masses of sclerosed tissue, varying from one to two lines in thickness, distributed through different portions of the cord. They are not confined to any particular portion of it, though they are most frequently met with in the lateral columns. Examined with the microscope, the nerve-tubes of the white and the nerve-cells of the gray substance are found to have disappeared, or to have greatly diminished in number, and to have been replaced by proliferation of the connective-tissue element, the pressure of which upon the nerve-cells and tubes is the cause of their disintegration and wasting, the fluid portion undergoing fatty degeneration.

Clinical Experience.—*Plumbum, Aluminum, Phosphorus, Secale* and *Argentum nit.* are the principal remedies which have been given, with greater or less success, in the various forms of spinal sclerosis.

Therapeutic Indications.—These will be given under the head of *posterior spinal sclerosis*, which see.

Auxiliary Treatment.—This is chiefly confined to preserving, as far as possible, the general health of the patient. Electricity can be of but little use in these cases, though the primary galvanic current (constant) is said to be of some benefit in relieving the contractions.

PRIMARY SPINAL SCLEROSIS.

Synonyms.—Spasmodic Spinal Paralysis, Primary Lateral Sclerosis, Primary Symmetrical Lateral Sclerosis, Idiopathic Lateral Spinal Sclerosis, Paralysis Spinalis Spastica; *Fr.*,

Tabes Dorsal Spasmodique; Ger., Spastische Spinalparalysie, Primäre Lateral-sklerose des Rückenmarks, Primäre Sklerose der Seitenstränge des Rückenmarks.

Definition.—A spasmodic spinal paralysis, caused by a symmetric and systematic primary sclerosis of the lateral columns of the cord.

Diagnosis.—The disease can only be recognized by the characteristic symptoms, viz.: paralysis with contractions, but without conspicuous muscular atrophy, pain in the back and limbs, and the absence of any intracranial lesion capable of accounting for the disease as a secondary disorder. Hence the difficulty of distinguishing between the symptoms of this disease and those of chronic spinal meningitis, multiple spinal sclerosis, and tumors pressing on the cord and giving rise to similar phenomena—a difficulty so great that, in the language of Dr. Hammond, I know of no sure sign by which, in the present state of our knowledge, the discrimination can be made.

Pathology.—The pathological changes observed in the spinal cord in this disease are in perfect harmony with the symptoms as interpreted by what is known concerning the physiological action of the different parts of the cord. Thus Charcot has shown that proliferation and hardening of the neuroglia, with simultaneous wasting of the nerve-cells and fibres (sclerosis), occurs to a greater extent in the cervical portion of the cord than elsewhere, the sclerosed condition, when this part is affected, extending as far as, and even beyond, the outer angle of the anterior horn of gray matter, while posteriorly it almost reaches the posterior tract of gray matter. As we descend the cord it becomes more and more circumscribed, while at the same time it approaches closer and closer to the cortical layer, until in the lumbar portion of the cord it touches the cortical layer, and at the same time only occupies about one-fourth the area of the lateral columns. When it extends to the medulla oblongata it is confined to the anterior pyramids, and does not involve the nuclei of the bulbar nerves, as in the amyotrophic form of lateral spinal sclerosis.

Clinical Experience.—This does not differ from that of the other forms of spinal sclerosis already considered.

Therapeutic Indications.—These will be given in detail under the head of *posterior spinal sclerosis*, which see.

Auxiliary Treatment.—See previous articles under this heading.

SECONDARY SPINAL SCLEROSIS.

Synonyms.—Secondary Spinal Degeneration; *Fr.*, *Les Dé-générations Secondaires de la Moëlle Épinière*; *Ger.*, *Secondäre Er-krankung Einzelner Rückenmarksstränge*.

Definition.—Secondary spinal sclerosis is a lesion which occurs in certain regions of the spinal cord, either as a result of some previous disease of the cord itself or as a consequence of intracranial disease.

Diagnosis.—Charcot's "foot phenomenon," Westphal's "tendon reflex," or knee phenomenon, and Onimus's "associated movements" are usually relied upon as diagnostic signs of secondary degeneration of the cord. (See the author's article on this subject in *Arndt's System of Medicine*, Vol. II., p. 641.)

Pathology.—The degenerative changes in this disease are similar to those which have already been described as characterizing the various forms of sclerosis, viz.: atrophy and degeneration of nervous filaments, the formation of granular corpuscles in the degenerated tissue, and the proliferation of the neuroglia. When muscular atrophy is associated with the paralysis and contracture resulting from the sclerosed condition of the cord, the anterior cornua are involved in the degenerative process, the nerve-cells undergoing more or less disintegration and wasting.

Clinical Experience.—This is similar to that of other forms of spinal sclerosis already described.

Therapeutic Indications.—These will be given in full under the head of *posterior spinal sclerosis or locomotor ataxia*, which see.

Auxiliary Treatment.—See above reference.

POSTERIOR SPINAL SCLEROSIS.

Synonyms.—Locomotor Ataxy, Progressive Locomotor Ataxia, Sclerosis of the Columns of Burdach, Tabes Dorsalis; Fr., *Ataxie Locomotrice*; Ger., *Graue Degeneration der Hinterstränge des Rückenmarks*.

Definition.—A form of spinal sclerosis involving the posterior root-zones of the spinal cord, characterized by loss of power of coördinating movements, whereby voluntary movements, and especially those concerned in walking, are rendered more or less unsteady.

Diagnosis.—When the characteristic symptoms are present, such as fulgurant pains, paræsthesia in the extremities, marked staggering on closing the eyes, the girdle sensation, the general lack of precision of movements, visual disturbances, etc., and, especially, loss of deep reflexes, the diagnosis is sufficiently clear; but when only two or three of them are present the disease is liable to be mistaken for mere functional disturbances producing ataxia. In estimating individual symptoms, we should remember (1) that sclerosis of the posterior columns always begins with sensory disturbances; (2) that the pains are fulgurant, intermittent and of irregular occurrence; (3) that they may be located in any part of the body, as the limbs, face, back, viscera; (4) that they precede the motor disturbances by months or years; (5) that they may for an indefinite period constitute the only symptoms of the disease; (6) that the continuance of the first stage, previous to the appearance of the ataxia, is usually about three years, though often not more than one, and sometimes as many as five; (7) that during this stage the patient may enjoy excellent health, though occasionally marked, perhaps, by slight functional disturbances, ocular, arthritic, etc., which scarcely attract attention; at last (8) ataxia, with the more prominent symptoms of the second stage, makes its appearance, and then, if not before, the disease is clearly recognized. In order to render the diagnosis more certain, tests may be made by means of the various reflex and associated movements referred to under the head of *secondary spinal sclerosis*, which see.

Pathology.—The pathological alterations consist in a peculiar degeneration, with subsequent atrophy and hardening of the posterior columns of the cord and the posterior roots of the spinal nerves. The white substance of the cord is converted into a grayish softened mass. The microscope shows few nerve filaments, granular cells, fatty molecules and corpora amylacea imbedded, as it were, in a matrix of sclerosed tissue, the result of proliferation of the neuroglia or connective tissue element. The diseased cord ultimately shrinks and indurates, constituting real atrophy of its essential constituents.

Clinical Experience.—The remedies which have been found to be of the greatest value in this disease belong mostly to the mineral class. They are: *Plumbum, Aurum met., Aurum mur., Aurum cyan., Phosphorus, Argentum nit., Zincum met. and sulph., Alumina, Physostigma, Gelsemium, Belladonna, Lathyrus cic., Esculus hip., Baryta carb., Angustura*, the last three, especially, for the fulgurant pains.

Therapeutic Indications.—*Plumbum.*—This remedy produces the anatomical lesions of disseminated sclerosis, the tremor, the paralysis and the muscular atrophies, and it has repeatedly cured these symptoms.

Aurum.—This metal and its preparations, the muriate and cyanate, have repeatedly cured both the fulgurating pains and the ataxia; weakness and paralytic feeling chiefly noticed when walking; amaurotic blur before the eyes.

Alumina.—Pain and paralysis of the lower extremities; impossible to walk with the eyes closed; soles of the feet feel as if they were swollen and too soft; numbness of the heels when stepping on them; when walking he staggers and is compelled to sit down.

Phosphorus.—Sexual irritation; involuntary sexual emissions; great irritability and nervousness; paralytic feeling in the feet and limbs, with trembling of the knees; pains darting from the hip-joint; anæsthesia, with increased heat; periodically returning insupportable pains in the spine, preventing walking; pain and tenderness in the soles of the feet. This remedy is suited to every stage of the complaint; the fulgurating pains and visual disturbances of the first, the ataxic symptoms and

genital excitement of the second, and the paralytic, atrophic and degenerative condition of the last.

Argentum nit.—Vertigo as if turning in a circle, preventing standing; momentary blindness; irregular movements of the extremities; limbs retracted toward the abdomen; instability of the limbs; vacillating gait; cannot walk in the dark without staggering. I once cured a well marked case of posterior spinal sclerosis with this remedy after the ataxic symptoms had set in.

Zincum.—Great weakness in the lumbar region and in the knees when walking; weakness, numbness and tremor in the limbs; lancinating pains extending to the knees, which feel as if they would give way; *paralysis of the bladder*.

Physostigma.—Feeling of unsteadiness and insecurity in walking; has to tread carefully, especially if the eyes are shut or when in the dark; feels the need of a cane or some other means of support; feeling of weakness, as though paralyzed, passes downward through the whole length of the spine to the lower extremities, which feel as if asleep; staggering gait, as if drunk.

Lathyrus cic.—Weakness and trembling of the limbs, followed by a sort of stupefaction; *almost total loss of power in the extremities*; pigs that eat it are said to drag their feet after them.

Gelsemium.—Paralysis of all the limbs; cannot move them, they feel so heavy; electric-like pains through the limbs; unsteady gait; muscles will not obey the will; sense of helplessness from brain-weakness; temporary blindness; *paralysis of the bladder*.

Belladonna.—Loss of power to coördinate muscular movements; when walking he raises his feet slowly and puts them down with force; trembling of the muscles and limbs; *weak and tottering gait*; paralytic weakness of all the muscles, especially of the feet; *paralysis of the motor oculi*; *fulgurating pains*; especially valuable during the initial period of the disease.

Helleborus.—Muscles do not act in harmony unless the attention is fixed upon them; walk slow and tottering; twitching, tearing pains in the limbs; *sudden relaxation of certain*

muscles; he lets fall an object held in the hand; staggering gait, with want of firmness in the legs and bending of the knees; vesical tenesmus; impotence, with flaccid penis.

Æsculus hip.—Lameness and paralytic feeling from neck down; back and legs weak, can hardly walk, must lie down; *fulgurant pains; ocular and vesical tabetic symptoms*. This remedy is indicated even when the sclerosis is well advanced.

Ignatia.—Weakness and trembling in the limbs; he was unable to walk, but was obliged to remain sitting, because *when walking the knee was involuntarily drawn upward*.

Baryta carb.—When standing he felt a blow in the thigh, above the right knee, so violent that he believed he would fall forward; in the right knee a rapid momentary pain, like cutting with a knife, which makes the leg lame; trembling of the hands and limbs; great mental and bodily weakness; constant inclination to lie down.

Angustura.—Twitching and jerking along the back like electric shocks; paralytic weakness of the whole body; indicated in the spasmodic form, or when the paresis is associated with fulgurant pains.

Silicea.—Trembling in the limbs, as if he had lost all power over them; wandering pains, passing quickly from one part of the body to another; sense of great debility, wants to lie down; limbs sore, lame and cold, go to sleep easily; paralytic weakness in the joints when sitting or walking; drawing, jerking pain in the hip-joint; tearing pains in the thighs, followed by numbness.

Oxalic ac.—Pains shooting down from the spinal cord to the limbs, especially the lower ones; back feels too weak to support the body; dyspnœa, followed by general numbness; jerking pains, confined to small spots and lasting only a moment.

Nux vom.—Staggering walk; when he walks he drags his feet; numbness and deadness of the legs and feet; incomplete paralysis, with the power of motion not entirely gone; paralysis of the bladder; obstinate constipation.

Auxiliary Treatment.—The operation of *nerve-stretching* has, until very recently, been regarded as an efficient means of

relieving the most distressing symptoms of locomotor ataxia, but at present the consensus of opinion on the subject among those whose opportunities of forming a correct estimate of its value in this disease are the greatest, is, that it is doubtful whether any marked symptoms have been permanently relieved by it.

Karl Pauli highly recommends the *lukewarm baths* introduced by Westphal as the best way of relieving the fulgurating pains, employing them almost constantly for weeks, or until the pains subside.

Both Mochoukowsky and Charcot speak very highly of the *treatment by suspension*. The former, who was the originator of the treatment, makes use of the apparatus of Dr. Sayre, of New York, the suspension at first being of only half a minute duration; this is gradually increased to three minutes, the maximum not exceeding four minutes. Treatment every other day suffices, no benefit accruing from its daily practice. Charcot finds that after twenty or thirty treatments Romberg's symptom disappears, followed by amelioration of the urinary and vesical symptoms; in a number of cases the plantar anaesthesia passed off. Other experiments, however, have been less successful with this mode of treatment, one case resulting, after two suspensions, in spasmodic paraplegia, which disappeared again after three days.

After all, however, we find that the most efficient agent in ameliorating the symptoms during the initial stage is *electricity*. Usually the positive pole of the galvanic current is placed on the nape of the neck and the negative sponge swept up and down the spine and limbs. Of late, Rumpf's treatment with the electric brush—the rapidly interrupted Faradaic current—along the back and legs, has seemed to do the most good, and almost entirely superseded every other form. The anode is applied to the sternum, and the cathode energetically carried over the spine and extremities until the surface turns to a deep red, each *séance* lasting ten minutes.

SPINAL TUMORS AND OTHER ABNORMAL GROWTHS.

Synonyms.—Meningeal and Intramedullary Spinal Tumors; *Fr.*, *Tumeurs Rachidiennes*, *Tumeurs de la Moëlle Épinière*; *Ger.*, *Krankhafte Geschwülste des Rückenmarks*.

Definition.—Tumors, foreign growths and adventitious products within the spinal canal.

Diagnosis.—The diagnosis is necessarily more or less uncertain, since the same symptoms may be produced by very different causes. Most cases, however, are attended by one or more of the following characteristics: (1) a very gradual onset of the symptoms; (2) exacerbations and remissions corresponding to changes in the size and vascularity of the tumor or other growth; (3) symptoms depending on the seat and circumscribed character of the lesion; and (4) the presence or absence of any other disease of the part capable of producing the symptoms. The nature of the foreign growth is, as a rule, still more difficult to determine. When the patient exhibits unmistakable signs of a scrofulous, syphilitic or cancerous dyscrasia, the presumption will be in favor of its belonging to the prevailing diathesis. Some light may also be thrown upon the subject by the presence of tumors elsewhere.

Clinical Experience.—This does not differ materially from the clinical experience given under the head of *cerebral tumors*, which see.

Therapeutic Indications.—These will be found under *spinal meningitis*, *myelitis*, *acute ascending paralysis* and other forms of *paraplegia*, which see.

Auxiliary Treatment.—In cases of debility, and especially when of a scrofulous, syphilitic or cancerous nature, the vital power should be raised, the nutritive functions improved, and the patient kept under the most favorable hygienic conditions.

SPINAL CONCUSSION.

Synonyms.—Concussion of the Spinal Cord, *Commotio Medulla Spinalis*; *Fr.*, *Commotion Spinale*, *Commotion de la Moëlle Épinière*; *Ger.*, *Erschütterung des Rückenmarks*.

Definition.—A shock communicated to the spinal cord and interfering with its functions.

Diagnosis.—In the absence of definite paralysis it is often necessary, in order to ascertain whether any organic lesion has taken place, to wait until sufficient time has elapsed after the accident to determine that question. This is the more necessary because meningitis, myelitis and anæmia of the cord are liable, sooner or later, to result from spinal concussion. These results, when present, will of course manifest themselves by their characteristic symptoms; but it should be remembered that several weeks may elapse after the injury before spinal symptoms are developed. Moreover, the difficulty of forming a correct estimate of the nature and extent of the spinal injury is greatly enhanced, in many cases, by the disposition of the patient and his friends—we refer especially to railroad accidents—to exaggerate the symptoms, either in consequence of their excited imagination or from interested motives, the question of pecuniary damage being in many instances an important factor in the diagnosis. The physician owes it to himself, no less than to others, to exercise the utmost care and intelligence in coming to a correct conclusion in such cases.

Pathology.—On this subject Erichsen, the leading writer on concussion of the spine, says: "We should be taking a very limited view of the pathology of concussion of the spine if we were to refer all the symptoms, primary and remote, to inflammatory conditions, either of the vertebral column, the sheaths of the spinal nerves, the meninges of the cord, or the substance of the medulla itself. Important and marked as may be the symptoms that are referable to such lesions as these, there are undoubtedly states, both local and constitutional, that are primarily dependent on molecular changes in the cord itself, or on spinal anæmia induced by the shock of the accident either directly on the cord itself, or indirectly, and at a later date through the medium of the sympathetic, in consequence of which the blood distribution to the cord becomes disturbed and diminished."

Clinical Experience.—*Calendula, Hypericum, Arnica, Rhus*

tox., *Conium*, *Cicuta*, *Sulphuric ac.* and *Hepar sulph.* are among the leading remedies resorted to in this condition, the first three being prescribed immediately after the accident, both internally and locally.

Therapeutic Indications.—These will mostly be found under *spinal hyperæmia*, *anæmia*, *hæmorrhage*, *myelitis*, *meningitis*, *paralysis* and *sclerosis*, which see. We shall here confine ourselves to those above mentioned.

Hypericum.—Great nervous depression following spinal concussion; vertebræ very sensitive to the touch; inability to walk after the injury, especially when the attempt is accompanied by violent pains; retention of urine, with shuddering and desire to urinate.

Calendula.—Traumatic cases, with stinging pains at the seat of injury; the patient is very uneasy in every position; great tendency to start, especially on hearing a noise; the injured part becomes red and inflamed; shuddering in the back; frequent micturition.

Arnica.—Spinal concussion attended by intrarachidian hæmorrhage; limbs cold, pulse slow and weak, and sickness of the stomach; paresis, with or without numbness of the limbs; pain aggravated by movement; symptoms better by lying quiet.

Rhus tox.—Paralysis, following spinal concussion; extreme coldness of the hands and feet; muscular startings and twitchings; pains and numbness in the paralyzed limbs.

Cicuta.—Paralysis, with insensibility; convulsive twitchings of the muscles; coldness of the body, with an excited and apprehensive state of the mind; irritability of the bladder; constipation.

Sulph. ac.—Weakness in the back and lower extremities so great as to prevent standing without support; shooting pains in the limbs, with trembling of the whole body; violent pressure on the neck of the bladder, with retention of urine.

Conium.—Spinal concussion attended by a sensation of numbness in the paralyzed parts; sensation in the limbs as if they were surrounded by tight bands.

Hepar sulph.—Great weakness of the limbs, with nervous

depression; shiverings from below upward; very excited and irritable; nervous trembling; weakness of the bladder, with involuntary discharges of urine.

Auxiliary Treatment.—If reactive fever sets in, accompanied by much pain in the back, ice or ice-water should be applied to the spine, for which purpose Chapman's rubber-bags will be found convenient. If necessary, the temperature of the body, and especially of the extremities, should be raised and maintained at the normal standard by artificial means. The continuous galvanic current will be found beneficial in hyperæsthetic states of the spinal cord. Cold salt-water douches and the shower-bath will sometimes prove useful in advanced cases. In most cases perfect rest in the recumbent position will be required for some time after the accident. Unless the shock is a very severe one, these measures, with rest and sleep, plenty of fresh air and a simple, nutritious diet, will be sufficient in most cases to restore the patient to health; but care must be taken not to permit any exercise until after the nervous system has recovered from its enfeebled and exhausted state; then the patient will often be benefited by a change of air and scene.

PART III.

CEREBRO-SPINAL DISEASES.

CEREBRO-SPINAL HYPERÆMIA.

Synonyms. — Cerebro-spinal Congestion; *Fr.*, *Congestion Cérébro-spinale*, *Hyperémie Cérébro-spinale*; *Ger.*, *Cerebro-spinale Hyperämie*.

Definition. — A simultaneous excess of blood in any portion of both the cerebral and spinal tissues.

Diagnosis. — Cerebro-spinal congestion is not usually recognized as a distinct affection, partly because it is partial rather than general, and partly because it is most frequently a symptom of some other disease. Those cases usually regarded as belonging to the convulsive form of cerebral congestion, but unattended by loss of consciousness, are of this character. The characteristic symptom is stiffness and aching in the back part of the head and neck, which may subsequently develop into epileptiform convulsions, or into a tonic contraction of the extensor muscles of the spine.

Pathology. — The congestion is usually limited to the base of the brain and upper portion of the spinal cord. The convulsive action is due to implication of the medulla oblongata, and when the cerebral hemispheres are involved there is also, in most cases, loss of consciousness.

Clinical Experience. — *Gelsemium* and *Cimicifuga* are the two leading remedies in this disease, and are almost infallible. *Belladonna*, *Natrum brom.*, *Kali brom.* and *Passiflora incarn.* are also useful remedies, especially the last.

Therapeutic Indications. — These are given under the heads of *cerebral* and *spinal hyperæmia*, which see.

NEURASTHENIA.

Synonyms.—Nervous Exhaustion, Nervous Debility, Brain Fag, Cerebro-spinal Anæmia, Cerebrasthenia et Myelasthenia; *Fr.*, *Anémie Cérébro-spinale*; *Ger.*, *Cerebro-spinale Anämie*.

Definition.—A functional disease affecting the whole nervous system, both cerebro-spinal and sympathetic, and marked not only by great mental and physical debility, but by other well-defined, but constantly varying symptoms, which appear and disappear suddenly without any regular order of succession.

Diagnosis.—The disease is liable to be confounded with anæmia and hysteria. The following tables, prepared by Dr. Beard, give the differential diagnoses between them:

Neurasthenia.	General Anæmia.
Chiefly found in nervous diathesis.	Appears also in the tuberculous, or rheumatic, or other diathesis.
Impoverishment of nervous system; no necessary anæmia. Patient may be plethoric.	Impoverishment of the blood; increase of water and diminution of the red corpuscles.
Found chiefly between the age of fifteen and sixty.	Found in all periods of life, from extreme infancy to old age.
Not at all necessarily dependent on any important recognizable organic disease.	More frequently, though not necessarily, associated with some organic disease, as tuberculosis, carcinoma, Bright's disease, etc.
Pulse may be full or normal, but sometimes very rapid or very slow.	Pulse small, weak and compressible.
No cardiac murmurs.	Murmur at the base of the heart and over the large arteries, as the carotid, subclavian, etc.
No pallor, sometimes even a rubicund appearance.	Very perceptible pallor of the face, especially of the lips.
Easily fatigued by exertion; mental labor in cerebrasthenia more exhausting than physical. Memory often temporarily weakened, and consecutive thought and sustained mental activity frequently impossible, even when prolonged muscular labor causes little or no fatigue.	Easily fatigued by exertion; physical labor always more exhausting than mental.

Neurasthenia.	General Anæmia.
Insomnia a very frequent complication.	Insomnia not so frequent a complication; frequently an abnormal tendency to sleep by day as well as by night.
No necessary or constant disturbance of the circulation.	Disturbance of the circulation, with habitually cold extremities.
Habitual mental depression.	Mental depression not so frequent.
Though common to both sexes, not so relatively frequent in females.	Far more frequent in females.
Usually recovers, but gradually, under the influence of rest and nutritious food.	May be rapidly removed by the removal of the organic cause.
Neurasthenia.	Hysteria.
No convulsions or paroxysms.	Hysterical convulsions and paroxysms.
No <i>globus hystericus</i> , no anæsthesia of the epiglottis, ovarian tenderness less common, and attacks of anaesthesia far less frequent and less permanent.	Globus hystericus, anæsthesia of the epiglottis, ovarian tenderness and attacks of general or local anaesthesia.
Symptoms more moderate, quiet, subdued and passive.	Symptoms acute, intense, violent and positive.
May occur in well-balanced, intellectual organizations.	Usually associated with great emotional activity and unbalanced mental organization.
Very common in males, though more common in females.	Very rare in males.
Is always associated with physical debility.	In the mental or psychical form, occurs in those in perfect health.
Never recovers suddenly, but always gradually, and under the combined influences of hygiene and objective treatment.	May recover suddenly and under purely emotional treatment.

Pathology.—General neurasthenia was formerly, and by many still is, regarded pathologically as a form of cerebro-spinal anæmia. Its resemblance to spinal irritation, which is generally regarded as a form of spinal anæmia, is most striking. The functional disturbances are not only equally great and varied, but even the characteristic spinal tendency is sometimes present. I am, therefore, disposed to regard the

disease as consisting essentially in a fluctuating local or partial anaemia of the great nerve-centres, in which the quantity and not, as in general anaemia, the quality of the blood circulating in the part is at fault.

Clinical Experience.—The favorite remedies for this disease appear to be; *Phosphorus*, *Chininum sulph.*, *Strychnia*, *Phosphoric ac.*, *Erythroxylon coca*, *Nux vom.*, *Picric ac.*, *Zincum brom.*, *Zincum pic.* and *Avena sat.* Many other remedies, however, have been employed with benefit in different cases; indeed, almost every remedy in the *materia medica* may be called for at one time or another, so variable and peculiar are the symptoms.

Therapeutic Indications.—*Phosphorus*.—Great heaviness and weariness from the least exertion; extreme mental and physical prostration; bruised feeling in the back and limbs; *myelasthenia*.

Chininum sulph..—*Neurasthenia* following severe and exhausting illness, loss of vital fluids, or overexertion, either bodily or mental; nervous trembling; weakness and trembling of the lower limbs; coldness of the extremities.

Erythroxylon.—General nervous debility, the slightest exertion being attended by fatigue; mental depression, with anxiety and palpitation of the heart; oppression of breathing arising from nervous debility; sleeplessness and disinclination to work or move about; constipation, with abdominal distension; fainting spells from nervous weakness; coldness of the limbs.

Arsenicum.—Constant disposition to lie down; sensation of weakness in the small of the back; weakness of the lower limbs, preceded or accompanied by copious watery stools; trembling of the limbs from debility; *thirst for small quantities of water*; sleeplessness and restlessness, especially at night.

Calcarea phos..—Nervous prostration, with great depression of spirits; sore, bruised feeling in the back, with inclination to lie upon it; coldness and weakness of the lower limbs from defective circulation in them.

Strychnia phos..—Aching pain, sometimes burning, extending from the back to the front of the chest, causing a feeling of

nausea and anxiety; tenderness on pressure over the dorsal region; sleeplessness; cold feet, covered with clammy perspiration; *great weakness of the lower limbs from exhaustion of the spinal motor nerve-cells; myelasthenia.*

Avena sat.—*Neurasthenia* of business and professional men, teachers, and women who have become exhausted by household cares and worry; coldness of different parts of the body depending on weakness of the circulation from lack of nerve force; *cerebrasthenia.*

Nux vom.—Nervous debility arising from debauchery and dissipation, late hours, high-seasoned food and abuse of ardent spirits; mental exhaustion of students and professional men; insomnia produced by overwork, business cares, etc. Indicated in all cases where there are a disordered stomach and constipation.

Zincum.—Chronic cases, attended by great mental and bodily depression; headache produced by mental exertion; loss of memory; cold extremities, with paralytic weakness; frightful dreams.

Staphisagria.—Nervous exhaustion caused by excessive sexual indulgence, onanism or loss of vital fluids; great mental depression; nocturnal emissions followed by great prostration; headache, backache and loss of memory, with inability to perform either mental or physical labor.

Epiphegus.—Nausea and general languor; severe pain in the forehead caused by any unusual demand upon the system; aggravated by rising and going about, always better by rest in a supine position and by sleep.

Zincum brom.—*Cerebrasthenia* caused by anæmia; mental and bodily weakness, with tendency to paralysis of the lower extremities. This remedy is preferable to Zinc alone, as it has a quicker action and is more readily absorbed.

Picric ac.—Hale regards this as one of our best restoratives of a wasted and worn-out nervous system; the least mental or physical effort exhausts the patient and brings on headache; homœopathic to the brain-fag of students, school-girls and literary or business men and women.

Zincum pier.—*Cerebrasthenia* and nervous exhaustion from

overworked brain or from sexual excesses; profound neurasthenia, when the nervous exhaustion has passed beyond the stage of erethism, seminal emissions or erotomania.

Calcis hypophos.—*Neurasthenia* attended by profuse night-sweats; sleeplessness, depression of spirits, loss of appetite, emaciation; pale and haggard look; habitual coldness and venus congestion of the limbs from debility; loss of virile power.

Ignatia.—Oppression of the chest and breathing from weakness; weakness of memory; depression of spirits; disposed to weep from the most trifling causes; loss of appetite, with feeling of repletion after swallowing a mouthful or two; palpitation of the heart on rising in the morning or after eating; complete absence of the sexual desire; face wan and pale; sleepless and full of fanciful apprehensions.

Phosphoric ac.—General debility, with feeling of extreme weakness and prostration; cold sweats during the day or on making any physical exertion; loss of all virile power; profuse night-sweats, followed by chilliness; mentally as well as physically depressed.

Zincum phos.—According to Hammond, who first introduced the remedy, it is homœopathic to mental depression, debility and nervous weakness, since in large doses it removes these symptoms when caused by cerebral *congestion*. Small doses, on the other hand, have in our experience frequently relieved these symptoms when dependent on cerebral *anaemia*.

Physostigma.—*Irritable spine, nervous headache and mental exhaustion*; eyes feel weak and swollen; *smarting, sore feeling on the tip of the tongue* which feels as if scalded; aversion to cold water; *mental exertion tends to produce nausea*.

Consult, also, *spinal anaemia* and *spinal irritation*.

Auxiliary Treatment.—One of my city patients who was gradually recovering from a severe attack of *neurasthenia*, attended with aphonia, was induced during the recent Brown-Sequard craze, to submit to repeated hypodermic injections of his so-called “vitalizing fluid.” At first the patient seemed to be benefited, as he speedily recovered his voice, but reaction setting in he again lost it, and his subsequent recovery was

manifestly greatly retarded by the absurd "scientific treatment" to which he had been thus subjected. This remedy (!), which at best is nothing more than a mechanical stimulant, is liable to give rise to septic poisoning or tubercular infection, and ought never to be sanctioned in these cases even as an auxiliary proceeding.

As a general rule, patients suffering with this disease will soonest recover by following closely what is known as the Weir Mitchell method of treatment. This consists (1) in perfect rest, both mental and physical; (2) the acceleration of muscular waste, and the consequent ability of assimilating a greater amount of food, by massage of the muscles by a trained shampooer, and by muscular contraction produced by Faradization; and (3) by supplying the waste so produced by regular and high feeding, so that the whole system, and the nervous system in particular, shall be abundantly nourished. The diet is to be increased and strengthened from day to day as this process goes on, until at last the patient is able to take, "in addition to two quarts of milk daily, three full meals, viz.: breakfast, consisting of a plate of porridge and cream, fish or bacon, toast and tea, coffee and cocoa; a luncheon at 1 P.M. of fish, cutlets or joints, stewed fruit or cream, or a pudding; dinner at 7 P.M., consisting of soup, fish, joint and sweets; and, in addition, a cup of raw meat soup at 7 A.M. and 11 P.M. Should there be an occasional attack of dyspepsia, which rarely happens, it is at once relieved by keeping the patient on milk alone for twenty-four hours. The raw meat soup is made as follows: Take one pound of raw fillet of beef, chop it finely and place it in a bottle with a pint of water and five drops of hydrochloric acid. Stand the mixture in ice all night, and in the morning set the bottle in a pan of water at 110° F., and keep it two hours at this temperature. It is then to be thrown on a stout cloth, and strained until the remaining mass is nearly dry. The filtered liquid is given in two or three doses in the course of twenty-four hours." To give the soup the flavor of cooked meat, the beef to be used may be quickly roasted on one side, and then the process completed as above described.

CEREBRO-SPINAL MENINGITIS.

Synonyms.—Epidemic Meningitis, Cerebro-spinal Fever, Spotted Fever, Epidemic Cerebro-spinal Meningitis; *Fr.*, *Méningite Cérébro-spinale Épidémique* *Méningite Cérébro-rachidienne*; *Ger.*, *Cerebral-Typhus*, *Epidemische-Meningite*, *Genickkrampf*, *Genickstarre*.

Definition.—An acute epidemic febrile disease, depending on a diffusive inflammation of the pia mater of the brain and spinal cord, and characterized by sudden invasion, with extreme nervous shock, followed by vomiting, fever, violent headache, extreme prostration, great restlessness, excessive pain referred to the back of the head and spine, spasmoid contraction of the spinal extensor muscles, excessive cutaneous sensibility and frequent delirium, and accompanied by purpuric and other eruptions on the face and limbs.

Diagnosis.—The disease is liable to be mistaken for typhus fever, purpura haemorrhagica and malignant scarlatina. From the first it may generally be distinguished by the sudden appearance of the rash, without any previous mottling of the skin, and by the nervous symptoms above noted; from purpura haemorrhagica, by the intensity of the fever and the peculiar nervous symptoms; and from malignant scarlatina, by the characteristic rash, sore throat and other symptoms of that disease.

Pathology.—The inflammation of the pia results in an exudation of purulent matter, which is deposited both at the base and on the convexity of the brain, in its various depressions, and along the course of its great vessels, on the pons varolii and cerebellum, and on the posterior surface of the spinal cord, especially in the lumbar region. The cerebral membranes are all more or less injected; and the arachnoid is rendered opaque by the puruloid exudations before mentioned, which vary in consistence from a thin milklike lymph to thick and dense fibrino-purulent deposits. The brain substance itself is more or less injected, and sometimes small spots of secondary softening occur, but in other respects the organ usually presents a normal appearance. The disease, therefore,

is a cerebro-spinal meningitis, of a specific, infective character, originating probably in a disease-germ, the nature of which is at present unknown.

Clinical Experience.—The remedies of greatest clinical reputation in this disease are *Gelsemium* and *Cimicifuga*. *Aconite*, *Veratrum vir.*, *Belladonna*, *Opium* and *Digitalis* are also frequently prescribed. *Baptisia*, *Rhus tox.*, *Apis*, *Hyoscyamus*, *Stramonium*, *Bryonia*, *Nux vom.*, *Arsenicum*, *Arum tri.*, *Kali brom.*, *Amm. brom.*, *Cicuta*, *Agaricus*, *Cannabis ind.*, *Cuprum acet.*, *Lachesis*, *Crotalus*, *Lachnanthes* and *Cactus* have all been used with more or less benefit in particular cases.

Therapeutic Indications.—*Gelsemium*.—Intense cerebro-spinal congestion, preceded by a severe chill; nausea and vomiting, followed by great depression, with dulness of speech, livid cheeks, dilated pupils, icy coldness of hands and feet, extreme prostration, very weak pulse and laborious breathing; general muscular weakness, without any impairment of the mental power; somnolency and coma; sweating relieves.

Cimicifuga.—Pain in the neck, shoulders and spine, also in the head, but not very violent, except perhaps in the top and back; *low, restless, excitable delirium, like that of delirium tremens*; eyes painful and sensitive to pressure; pupils dilated; general prostration, accompanied with more or less vomiting; tongue swollen and throat dry, causing a constant desire to swallow; muscular twitchings in various parts of the body; profuse cold sweat and very quick pulse.

Veratrum vir..—Severe pain in the neck and shoulders; vertigo, with dimness of sight, dilated pupils and vomiting; loss of consciousness, with coldness of the body, irregular and feeble pulse and great prostration; convulsive twitchings; tonic contraction of the extensor muscles of the spine; pulse frequent and feeble; trembling of the whole body.

Opium.—Somnolency, or a tendency to stupor, with or without delirium; face bloated and muscles relaxed; head and limbs feel cold, numb and heavy; eyes fixed and half closed; opisthotonus, with constrictive feeling in the chest and difficulty of breathing; vomiting, colic, diarrhœa or constipation; abdomen hard and swollen; spasmodic jerkings of the limbs; cold perspiration; *coma*; worse when sweating.

Digitalis.—Stiffness in the back and side of the neck; sharp stitches and severe cutting pains in the nape of the neck; *heart's action slow, irregular and labored*; head tends to fall backward when raised up or sitting; violent lancinating pains in the head, especially in the occiput; delirium resembling that of delirium tremens (*Cimicifuga*); depression accompanied by faintness and vomiting; convulsions, with retraction of the head; syncope, with coldness and tendency to collapse.

Aconite.—In cases where there is well-marked reactionary fever, attended by chilliness, thirst, restlessness, dryness of the skin and anxiety of mind.

Baptisia.—*Typhoid symptoms*, accompanied by a bruised and painful feeling in the back of the head and neck; *body feels stiff and sore all over*; dark, livid spots on the skin; great restlessness, especially of the head and limbs, which are in constant motion; stomach sore and sensitive to pressure; vertigo; weakness and trembling of the limbs.

Apis mel.—Pain and stiffness in the back of the neck; burning and throbbing in the head; stabbing pains in the occiput; great mental and bodily prostration, with sense of suffocation; swelling of the face, giving it an oedematous appearance; hyperaesthesia of the skin, with stinging pains all over the surface; *great oppression of breathing, feels as though he would suffocate*; pulse variable and intermitting; dimness of sight; urine scanty or suppressed.

Cicuta.—Vertigo, with moaning delirium; head retracted; muscles of the neck sore and stiff; anxious expression of countenance; dilated pupils; double vision; tonic contraction of the spinal extensor muscles, especially those of the neck; opisthotonus; spasmoidic action of the muscles of the face and limbs; convulsions attended with cries, working of the jaws, distortion of the limbs, spasm of the muscles of the chest, painful distension of the abdomen, followed by insensibility and immobility; pain in the stomach and vomiting; ashy hue of the skin; diarrhoea or constipation; general paralysis.

Hyoscyamus.—Drawing pain in the neck when turning the

head ; violent headache, alternating with pains in the back of the neck ; throbbing sensation in the brain ; heaviness of the head, with dimness of vision, palsy of the tongue, and small, quick and intermitting pulse ; stiffness of cervical muscles and trismus ; spasms of the chest, with temporary arrest of breathing ; epileptiform convulsions ; jerking of the limbs ; constant grinding of the teeth ; brown spots, large pustules and gangrenous vesicles on the skin ; relaxation of the lower sphincters, with involuntary evacuations.

Cannabis ind.—Pain in the back of the head and across the shoulders and spine ; fixed, staring eyes, with dilated pupils ; vertigo on rising ; hearing unusually acute ; emprosthotonus or opisthotonus, with loss of consciousness ; face cold, with drowsy and stupid expression of countenance ; great oppression of the chest ; pulse feeble and irregular ; collapse, with pale, clammy and insensible skin.

Hydrocyanic ac.—*Malignant cases*, attended with immediate collapse ; protruded half-open eyes ; dilated and insensible pupils ; bloated and bluish face ; eyes insensible to light ; tongue protruded and paralyzed ; feeble, irregular pulse and respiration ; general coldness ; involuntary evacuations of faeces and urine.

Veratrum alb.—Stiffness of the neck, with bursting sensation in the head and choking in the throat ; violent headache, with delirium ; vomiting, with convulsive shocks in the head as soon as it is raised up ; head thrown back and rolling from side to side ; face pale, cold and cadaverous looking ; convulsions, with loss of sense and motion ; watery diarrhoea, attended by collapse ; coldness and numbness of the limbs.

Phosphorus.—Headache, with burning and stinging pains in the occiput ; laming pains in the spine ; dulness of hearing ; frequent fainting ; great prostration ; *petechial and purpuric eruptions on the surface of the limbs or body* ; tingling and tearing pains in the limbs ; difficulty of breathing.

Nux vom.—Hyperaesthetic condition of the cerebro-spinal system of nerves ; shocks in the brain ; scalp sensitive to the touch ; loud, reverberating sounds in the ears ; oversensitivity to odors ; stitching pains through the body ; convulsions

renewed by the least touch; conscious opisthotonos; bruised sensation in the head, body and limbs, with feeling of heaviness; numbness and paralytic drawing in the extremities.

Crotalus.—Nausea and vomiting, preceded or accompanied by faintness; extremely violent headache; burning, unquenchable thirst; delirium, with staring eyes; anxious breathing; purplish spots on the skin; feeble pulse; pallid face; painful heaviness of the limbs.

Argentum nit.—Cutting pains extending through the head from forehead to occiput, increasing and diminishing frequently; vertigo, photophobia, ringing in the ears, double vision; tongue coated white, or else black, hard and dry; sordes upon the teeth; lips and nails blue; breathing greatly oppressed; epileptiform convulsions; jerking and trembling of the limbs; face pale and emaciated; clouds before the eyes; deafness; incontinence of faeces and urine.

Coccus.—Headache, with vertigo, vomiting and feeling as if the eyes would be torn out; painful stiffness of the muscles of the neck; epileptiform convulsions; face pale and bloated; convulsive trembling of the head; miliary eruptions; fainting fits; constriction of the chest, with heavy and laborious breathing.

Rhus tox.—Heavy, bruised feeling in the brain, extending to the ears and back of the neck; bruised feeling in the back and limbs; vesicular eruptions on the face and upper part of the body; vertigo, bleeding of the nose and somnolency; dry cough, with perhaps bloody sputa; great restlessness, with intense aching in the limbs.

Cuprum.—Nausea and vomiting from cerebral congestion; nervous trembling, with hyperesthesia of the senses; convulsions; sad, depressed features, with dim, sunken eyes, surrounded with blue rings; general paralysis; somnolency or coma.

Belladonna.—Stupefying headache, worse in the back of the head and extending to the neck; pain in the neck ameliorated by bending the head backward; hyperesthesia of the special senses; convulsive movements, especially of the muscles of the face and neck; grinding of the teeth; upper part of the

body hot, extremities cold; pupils dilated; delirium with or without coma; retention or inconstancy of urine.

Plumbum.—Early paralytic symptoms; limbs feel too heavy to be moved; heavy feeling in the back of the head; retraction of the abdomen; colic, with obstinate constipation; emaciation; somnolency.

Lycopodium.—Headache, with pain extending down the neck; hyperæsthesia of the special senses; *dyspnea, with fanlike movement of the nostrils*; sense of constriction in the chest and abdomen, as though bound with a hoop; numbness and twitching of the limbs; dreads solitude; melancholy and irritable.

Æthusa cynap.—During dentition, when accompanied by sudden, excessive, almost continuous vomiting, and attended by epileptiform convulsions; face pale, eyes staring, pupils dilated and insensible to light.

Arsenicum.—Stiff, sore feeling in the back of the neck; scalp sensitive and painful; the characteristic thirst for but little water frequently repeated; tetanic rigidity; spasmodic grinding of the teeth; great restlessness and prostration; vertigo; dulness of vision; anxious respiration; tongue dry and trembling; face pale and corpselike; diarrhœa; somnolency.

Cantharides.—Lancinating pains in the occiput, extending deep into the head; spasmodic constriction of the throat; priapism, with amorous frenzy; tetanic spasms; eyes staring; face pale, with terror-stricken expression; general coldness, faintness and trembling.

Agaricus.—Drawing pains in the back of the head; stiffness and soreness of the nape of the neck and spine; violent pains all along the spine; delirium; somnolency.

Zincum.—Convalescence retarded; prostration of the vital power, with profuse and easy sweating; flushes of heat in head and face; trembling and twitching of the hands and feet; weak and watery eyes; weak memory; troubled with flatulent colic; priapism; dysuria; constipation.

Auxiliary Treatment.—Local measures are usually of little avail. Ice to the head and spine sometimes has the effect of allaying the pain, but there is no evidence of its ever

having done any permanent good. The same is true of heat, except so far as its moderate use during the collapsed state may help to restore the normal temperature. Stimulants, carefully administered, may also serve to help bridge over a dangerous crisis in the disease, but their use under any circumstances in this disease is of very doubtful propriety. The diet during the earlier stage, or while the patient's stomach is in a disturbed state, should consist chiefly of animal broths, which, if necessary, may be given by the rectum. At a later period more substantial food may be allowed, such as milk, eggs, oysters, fish and the like, care being taken that it be not only nutritive and easy of digestion, but acceptable to the patient's stomach.

INFANTILE CONVULSIONS.

Synonyms.—Infantile Fits or Spasms, Infantile Eclampsia, Eclampsia Infantum; *Fr.*, *Convulsions de l'Enfance*; *Ger.*, *Kinderzuckung*, *Kinderkrampf*.

Definition.—General clonic, epileptiform, acute spasms, occurring during infancy and childhood, and produced by transitory causes.

Diagnosis.—It is not always easy to distinguish infantile eclampsia from infantile epilepsy. The chief distinctions are embraced in the above definition. Eclampsia is an acute disease, while epilepsy is chronic; the former depends on some permanent or hereditary influence, the latter on some accidental or transient form of irritation.

Pathology.—While hereditary influences do not directly produce simple eclampsia, they no doubt strongly predispose to their occurrence. Nervous susceptibility is another important factor, and this is heightened by the absence of any voluntary restraining influence emanating from the will. But the most potent factor is believed to be anaemia. In most cases this is both absolute and relative. The child's brain contains more water than that of the adult. An anaemic condition is often induced by the operation of debilitating causes, such as impure air, insufficient or unwholesome diet, and other

devitalizing influences to which infants are far more often ignorantly or unintentionally than necessarily exposed.

Therapeutic Indications.—*Belladonna*.—Head hot and throbbing; face deep red or else pale; eyes injected, tremulous or staring; pupils dilated; intolerance of light; drowsiness, and starting from sleep as if frightened; great vascular excitement; mouth and tongue dry, with great thirst; pain in the neck; head drawn backward; great restlessness and tossing about; when aroused from stupor answers questions with a jerk; indicated in all cases where there is unmistakable evidence of cerebral congestion.

Gelsemium.—Pain, often severe, in the back of the head and neck; great nervous excitement, or else a stupid, comatose condition, from which the child is aroused with difficulty; cerebral hyperæmia during dentition; child constantly boring its head into the pillow; delirious as soon as it falls asleep; excessive irritability; eyes sensitive to light; cramps and spasms of the extremities; cries out suddenly from time to time; especially indicated in cases produced by heat, or where there is marked cerebro-spinal congestion.

Aconite.—Marked febrile excitement; hot, dry skin; child frets, cries out suddenly, gnaws its fists and starts as if frightened; appears to be in great suffering; very restless; twitching of single muscles; convulsions caused by fright, cold, teething and inflammatory affections, such as otitis, dysentery, etc.

Ignatia.—Convulsions return periodically; child screams and trembles violently; kicks, jerks and has convulsive twitchings of single parts; convulsions extremely violent, with a predominance of tonic spasm; indicated after fright, during dentition, after being punished, or during the commencement of exanthematic fevers.

Camphor brom.—Anæmic subjects, with pale lips, coldness of the body and extremities; after taking cold; when preceded or accompanied by a watery diarrhœa; when brought on by a suppressed catarrh; when there is great physical prostration.

Kali brom.—Head hot and body and limbs cold; feet and hands blue and cold; eyeballs move in every direction; teeth-

ing, accompanied by vomiting and diarrhœa; intestines contracted into a hard ball perceptible to the eye; great excitement of both the nervous and vascular systems; internal as well as external spasms; grinding of the teeth during sleep, with moans and cries; indicated where there is cerebral anaemia.

Veratrum alb.—Anaemic subjects, in whom the convulsions are attended or accompanied by diarrhœa; face pale, with cold sweat on the forehead; child trembles all over; especially valuable when the child is very much prostrated after the spasm, or when secondary to pneumonia or cholera infantum.

Cuprum.—The spasm begins in single muscles, or in the fingers and toes; is preceded by violent vomiting; is followed by loud cries; child lies on its face, or turns and twists violently until the convulsion is repeated; bloated abdomen, with thin, watery, involuntary discharges; child fairly doubles itself up during the spasm; during dentition in anaemic cases.

Cina.—Convulsive attacks at night or early in the morning; spasms of the extensor muscles, the child becoming suddenly stiff, followed by trembling of the whole body; unusual pallor about the nose and mouth, with flushing of the cheeks; child grinds its teeth during sleep; starts and moans during sleep; child is feeble and whines more or less when awake; very restless, throwing its arms wildly from side to side; is very feverish, and sometimes delirious, at night.

Opium.—After the spasm the child lies in a deep stupor; body trembles violently, while the limbs are convulsed; child screams before or immediately after the spasm; indicated after fright of the child or of the nurse, or when there is much stupor, with retention of urine and faeces.

Stramonium.—Heat of the head and body, with red face and staring eyes; spasms frequently repeated and continually changing their form; child is frightened by the approach of strangers and shrinks from them; abdomen swollen; urine profuse; when caused by the suppression of an eruption, or when the exanthem fails to make its expected appearance.

Glonoin.—Skin hot, face flushed, head drawn back, spasms

unilateral or bilateral; fainting spells, accompanied by difficulty of breathing; bowels loose, with greenish, undigested stools; indicated in cases where there is marked cerebral congestion, attended by palpitations of the heart, dizziness, vomiting and oppression of breathing.

Cypripedium.—Reflex convulsions, occurring in children of an excitable, nervous temperament, or where there is functional irritation of the brain, which renders the child sleepless even at night; child's humor is very changeable, being playful at one moment and irritable and fretful at another; in cases of teething or of intestinal irritation.

Hyoscyamus.—Congestion of the head; face bloated and flushed; convulsive jerks of single muscles, or of a finger or hand; jerking and twitching of the facial muscles; grating of the teeth during sleep; eyes red and sparkling; child starts at every sound; shrieks from fright or fear; sickens after eating, and perhaps vomits; becomes insensible and froths at the mouth; spasms violent and last a long time.

Zincum.—Child starts and screams out in its sleep; has a startled look when it awakes; the whole body twitches and jerks; sometimes the convulsive movements are confined to one side or to single limbs or muscles; body hot; restless and irritable, especially at night; great appetite; bloated abdomen; anaemic children during the process of teething.

Nux vom.—Spasms very easily renewed, and followed by deep sleep; when caused by indigestion, or by emotional excitement in the nurse.

Stannum.—Irritative fever from worms, but with more excitement, more cerebral irritation and more fear than in Cina; convulsions from dentition or intestinal irritation.

Cicuta.—Sudden and unexpected attacks of severe tonic contractions, affecting the whole body, and making it stiff and straight or bending it backward; clonic convulsions affecting the head and upper portion of the body; muscular spasms renewed by the least excitement of the child, or depending on verminous irritation.

Chamomilla.—Extreme restlessness, child exceedingly cross and worrisome, can only be pacified by being carried about in

the nurse's arms; disordered condition of the stomach and bowels; muscles of the face and limbs twitch and jerk violently from intestinal irritation, or from nursing a woman who has just had a fit of anger and whose milk does not agree.

Helleborus.—Convulsions of cerebral, or of apparently idiopathic origin; intense pain in the head; urine dark, scanty and frequently emitted; convulsions followed by sudden relaxation of the whole body, leaving the body cold and with a cold sweat on the forehead; tonic spasms of the cervical muscles.

Ipecacuanha.—Great irritation of the stomach and bowels; frequent vomiting; convulsive attacks caused by indigestible food, or by a suppressed exanthem.

Physostigma.—Convulsions caused by reflex irritation of the spinal nerves, especially when preceded by twitching and trembling of the muscles, dizziness and great weakness in the lower extremities; intestinal irritation produced by cold, worms, dentition, etc.

Veratrum vir.—Convulsions secondary to pneumonia, or when attended by fever, cough or diarrhoea; face pale, or bluish and cold, or covered with cold perspiration; violent vomiting, which is immediately renewed on taking the least food or drink; convulsive twitching of the muscles of the face and limbs, which are cold and damp, or covered with a cold perspiration.

Auxiliary Treatment.—There is perhaps no disease in which accessory treatment is of greater importance, in most cases, than in infantile convulsions. This will be evident by a moment's consideration of the fact that the causes are almost innumerable, and that unless the cause be removed a permanent cure cannot be expected. This suggestion may be all that is required under this head; if not, the reader will find the whole subject treated at length in the author's *Treatise on Diseases of the Nervous System*, pp. 37-40.

POSTNATAL CONVULSIONS.

Synonyms.—Convulsions of the New-Born, Eclampsia

Neonatorum, Trismus Nascentium; *Fr.*, *Trisme de l'Enfance*; *Ger.*, *Eklampsie der Neugeboren, Kinderstarrkrampf*.

Definition.—Spasmodic muscular contractions, of a tonic or clonic character, occurring shortly after birth.

Diagnosis.—The time of their occurrence, which is usually on or about the fifth day after birth (very rarely earlier than the second day, or later than the tenth), is sufficient to distinguish them from ordinary infantile convulsions, with which alone they are liable to be confounded.

Pathology.—Out of nine cases, Schuetz found haemorrhages six times in the intracranial cavity and twice in that of the spinal cord, while in only two instances did he observe inflammation and ulceration of the umbilicus, to which at one time they were supposed to be due. He therefore thinks that when by some unknown causes haemorrhages occur in either the cranial or spinal cavities, and produce sufficient pressure on certain nervous parts, "reflex manifestations and involuntary motions will follow, attacking larger or smaller complexes of muscles," in other words, producing general or partial convulsions.

Clinical Experience.—This has been anything but flattering. Cures, however, have been reported from the use of *Hypericum*, *Passiflora*, *Arnica*, *Cicuta* and *Calcarea*.

Therapeutic Indications.—These have already been given under the head of *infantile convulsions*, which see.

Auxiliary Treatment.—As the disease very rarely occurs among infants that are kept dry and clean, in a pure atmosphere and with comfortable surroundings, it is evident that hygienic measures are of primary importance, both in a prophylactic and therapeutic point of view.

PUERPERAL CONVULSIONS.

Synonyms.—Convulsions of Pregnancy and Parturition, Puerperal Eclampsia, Uræmic Convulsions, Eclampsia Gravidarum et Parturientium; *Fr.*, *Convulsions des Femmes Enceintes et en Couche*; *Ger.*, *Eklampsie in der Schwangerschaft und im Wochenbett*.

Definition.—Convulsions occurring during pregnancy, during labor, and immediately at or soon after delivery.

Diagnosis.—This is obvious from the condition of the patient and the history of the case.

Pathology.—Albuminuria exists in almost every case of puerperal convulsions; and as albumen and urea in the urine are in inverse proportion to each other, that is to say, when there is much albumen there is little urea, and when there is much urea there is little albumen, it is a generally accepted fact that most, if not all, cases of puerperal convulsions are due to the poisoning of the blood with urea, either directly or by the carbonate of ammonia produced by its decomposition.

Clinical Experience.—The *post hoc ergo propter hoc* argument has led to the acceptance of a very large number of remedies as specifics in this disease. Making proper allowance for this fact, the following list is entitled to confidence, provided, of course, the remedies are always given agreeably to their therapeutic indications: *Cuprum*, *Hydrocyanic ac.*, *Arsenicum*, *Hyoscyamus*, *Bryonia*, *Stramonium*, *Digitalis*, *Pilocarpus*, *Asclepias syr.*, *Veratrum vir.*, *Gelsemium*, *Belladonna*, *Opium*, *Lachesis*, *Ignatia* and *Œnanthe croc.* The following remedies will prevent, it is said, the full development of threatened convulsions if given in time: *Apis*, *Helonias*, *Apocynum can.*, *Eupatorium purp.*, *Kalmia* and *Barosma*.

Therapeutic Indications.—*Cuprum*.—Convulsions alternate with delirium and nervous dyspnœa; are followed by blindness or deafness, or by apathy and great indifference; during the paroxysm the face is red and distorted, eyes protruding and staring, tongue and breath cold; spasms chiefly affect the extensor muscles; patient frequently screams out, as if in great anguish.

Hydrocyanic ac..—Convulsions occurring suddenly, and attended by great depression, slow, moaning breathing and insensibility; spasms, partial or general, with great distortion of the features and limbs, or with the trunk bent forward; spasm of the larynx, with symptoms of suffocation; inability to swallow; rattling in the trachea; extreme anguish; action of the heart greatly diminished; extreme prostration.

Arsenicum.—Tonic and clonic spasms, with great distortion of features, limbs stiff and hands clenched; after the paroxysm the patient exhibits great exhaustion; sudden sinking of strength, with faintness; lies in a stupor like one dead, breathing imperceptibly.

Hyoscyamus.—Clonic convulsions, either partial or general, violent, accompanied by shrieks and great oppression of the chest; face pale, with cold perspiration, or bluish-purple and bloated; unconscious and delirious; extensor muscles violently convulsed.

Bryonia.—Convulsive jerking of the extremities, beginning in the fingers and toes and extending to the whole limb; cramps in the knees and calves of the legs; worse in the morning and after eating; drawing sensation along the spine, followed by violent contraction of the extensor muscles, bending the body backward like a hoop; face red and bloated; very apprehensive as to recovery.

Stramonium.—Patient very excitable, hysterical, delirious, and has frightful or agreeable visions, with corresponding moods and actions, laughing, singing, attempting to escape, etc.; convulsive movements of every muscle, distorting the face, body and limbs; convulsions easily excited and frequently renewed.

Digitalis.—Frequent convulsions, with drowsiness and insensibility; heart greatly embarrassed, weak and palpitating, and frequently intermits.

Pilocarpus pennat.—Puerperal convulsions, attended with high arterial excitement, hard pulse, heavy blood pressure; perspiration, with free flow of saliva; dyspnoea, threatening suffocation.

Asclepias syr.—Uraemic convulsions, preceded by severe headache, with sharp pains through the temples, or with a sense of constriction across the forehead, full, quick pulse, and nausea or vomiting; attacks preceded by profuse, then scanty or suppressed urine.

Veratrum vir.—Convulsions attended by high arterial excitement, violent delirium, flushed face, thirst, hot and sensitive skin, followed by a weak, scarcely perceptible pulse, and cold, clammy skin, dilated pupils and oppressed breathing.

Gelsemium.—Passive congestion of the head and face, stupid look, thick speech, slow, full pulse; labor protracted by rigid os uteri; apoplectiform convulsions during labor.

Belladonna.—Active or passive cerebral congestion; face red or livid, pupils dilated, speech thick or lost; convulsions partial or general, frequently repeated and attended by loud cries, contortions of the face and delirious mutterings; paroxysms followed by quiet, unconscious sleep, or by disturbing spasmodic movements and visions.

Opium.—Uraemic coma following puerperal convulsions; convulsive rigidity of the body; red, bloated face and stertorous breathing; retention of stool and urine; low, incoherent muttering; apoplectiform convulsions during or after labor.

Lachesis.—Convulsions continue longer and are more severe about the throat than elsewhere; complains of pains without being able to locate them; redness of the face, violent convulsions of the facial muscles and jerking of the extremities, most violent on the left side; trembling of the body and limbs between the paroxysms.

Ignatia.—Great nervous excitement, manifesting itself in cries, sobs and paroxysms of laughing; loquacious and then taciturn; tries to kick the cover off the bed; constantly pulling at her hair; urine turbid and scanty; suffocative fits of breathing; panting between the spasms, which are often limited to the muscles of the upper part of the body, the neck and the face.

Œnanthe croc.—Epileptiform convulsions, with swollen and livid face, followed by coma or deep sleep, or else with syncope, insensibility and deathlike coldness; apoplectiform convulsions, with convulsive respirations, dilated pupils, insensibility, feeble pulse and great prostration; wildly delirious; tetanic contraction of the limbs.

Auxiliary Treatment.—As a general rule the sooner the womb is emptied of its contents the better, as this alone often suffices to put an end to the convulsions. When, therefore, the spasms occur during labor, artificial delivery should be speedily effected, unless there is some weighty reason for deferring the operation. The same is often true when the con-

vulsions set in previous to labor, provided they seriously threaten a miscarriage. Even when they occur subsequent to parturition it is important to remove any clot, membrane or portion of the placenta which may have been retained, as the convulsions seldom, if ever, entirely cease so long as any of the contents of the womb remain in the uterine cavity.

TOXÆMIC CONVULSIONS.

Synonyms.—Convulsions from Poisoning of the Blood, Uræmic Convulsions, Cholæmic Convulsions, Convulsions from Inanition, Eclampsia Toxica; *Fr.*, *Convulsions Toxémiques*; *Ger.*, *Eklampsie-blutvergiftung, Toxämische Eklampsie*.

Definition.—Convulsions resulting from the introduction or retention of poisonous substances in the blood.

Diagnosis.—As in other forms of eclampsia, the history of the case, together with the appearance of the patient, is usually sufficient to establish the diagnosis. Thus, uræmic convulsions occur either in connection with parturition or disease of the kidneys; cholæmic convulsions result from the introduction of decomposing products of animal secretions into the blood; and the convulsions of inanition are induced by the intoxicating effect of the deteriorated blood upon the nervous centres.

Pathology.—The pathology of uræmic convulsions occurring in connection with parturition is given in the previous section, which see. They likewise occur in the course of scarlatica in consequence of sudden obstruction of the urinary passages with croupous exudation. They may also be produced by any affection of the kidney, such as Bright's disease, which interferes with the secretion of urine, or by a re-absorption of urine which has been previously effused into the cellular tissue, especially after the urine is decomposed and the blood becomes surcharged with the carbonate of ammonia (*ammoniæmia*). Cholæmic convulsions occur most frequently in acute atrophy of the liver, as on account of the destruction of the hepatic cells the function of the liver then ceases. In short, whenever from any cause the blood becomes so impure

as to irritate the convulsive centre in the medulla oblongata, toxæmic convulsions are the result.

Clinical Experience.—All worth mentioning will be found under the heads of *cerebral hyperæmia*, *cerebral anæmia* and *puerperal convulsions*, which see.

Therapeutic Indications.—See previous sections, especially those pertaining to *convulsions*.

Auxiliary Treatment.—Hygienic measures, especially such as will tend to purify the blood, are of the highest importance. Hence pure air, water, and a blood-making diet of beef and other animal food, are required in all cases. Massage is also of great benefit by its renewing effect upon the tissues.

EPILEPSY.

Synonyms.—The Falling Sickness, *Morbus Magnus*, *M. Major*, *M. Dæmonius*, *M. Divinus*, *M. Deificus*, *M. Lunaticus*, etc., *Epilepsia*, *Epilepsis*; *Fr.*, *Épilepsie*, *Mal Divin*, *Haut Mal*; *Ger.*, *Fallsucht*.

Definition.—A chronic, non-febrile, nervous affection, characterized by paroxysms of loss of consciousness and, with very rare exceptions, by tonic and clonic convulsions.

Diagnosis.—Is there any way of positively diagnosing an epileptic paroxysm, as such, without reference to its history? No! Eclamptic and epileptic convulsions accompanied by loss of consciousness belong to the same group of symptoms; the only difference is they occur under different conditions. The one is acute or transitory, the other chronic, and recurs in conformity to an established epileptic habit. No doubt there is such a thing as infantile epilepsy, but such cases are indeed very rare. Up to about the third year of life the epileptic habit is not likely to become established, while after that period local irritations, either internal or external, are not likely to cause convulsions without the pre-existence of an inherited morbid state of the nervous centres.

Epilepsy is liable to be mistaken for hysteria, which is not only chronic, but often simulates epilepsy very closely. In epilepsy the loss of consciousness is sudden and genuine;

there is no recollection of the attack afterward; the eye is fixed, the features often distorted and the tongue bitten. In hysteria, on the other hand, the attack is not sudden, consciousness is not entirely lost, and there is no reckless injury of the tongue or person.

Syphilitic epilepsy may be distinguished from idiopathic epilepsy by the fact that it occurs in those who have not had epilepsy in early life and who have reached the age of at least thirty years; the disease is frequently associated with or is followed by some form of paralysis, generally partial; the attacks are frequently preceded by headache, likewise partial, and the convulsions occur often, that is, many in quick succession, the interval between the series of attacks being comparatively long; the periods of quietude, however, are not free from headache or other nervous symptoms which exist and often become aggravated—conditions contrary to what usually obtain in simple or idiopathic epilepsy.

Pathology.—Although no constant anatomical changes have yet been observed in this disease in any of the great nerve centres, the fact that it is in most cases an hereditary affection, and chronic in its nature, renders it almost certain that it is something more than a mere functional disorder, and this accords with the latest investigations, which go to show that it depends, in a measure at least, on certain histological changes in the medulla oblongata. Cortical epilepsy is only a peculiar form of peripheral epilepsy, the cortical irritation being reflected upon the convulsive centre or centres in the medulla, as in other cases of reflex epilepsy.

Clinical Experience.—Notwithstanding the universally admitted fact that genuine epilepsy is extremely difficult of cure, the number of remedies to which such cures have been assigned are almost too numerous to mention. I shall therefore refer here to only a few of those whose recorded cases are before me. *Indigo* is said to have cured a case where the mental symptoms were those of melancholy. Dr. Quezada says that when he was a boy, aged 13, he had fourteen epileptic attacks, and that he was permanently cured by the fruit of *Capparis cor.*, or "simulo," a plant indigenous in Peru. Dr.

Foster prescribed *Cannabis ind.* in a case of forty years' standing—in which an unfailing premonition of an approaching attack was a feeling of extraordinary mental and physical vigor—in doses of one-tenth of a drop every hour when she felt thus "exalted," with the result that she has had but one slight seizure since she began the use of it, now nearly three years, while before she had about thirty annually. *Glonoin*, 2x dil., is said to have cured many cases. *Calcarea ars.*, recommended by Dr. Hering, is said to have benefited several, and entirely stopped a few cases. Dr. Buller claims to have cured epilepsy with *Cotyledon umb.* *Belladonna* is credited with a large number of cures, but as most of them occurred in children, I am inclined to regard most of them as cases of ordinary infantile convulsions. *Cocculus*, according to Hughes, has made several undoubted cures. *Cuprum acet.*, 3x, cured a case where every usual remedy had failed, fifteen years having since elapsed without any return. *Nux vom.*, 3x, cured a case of sixteen years' standing; four years have passed without any return. *Hydrocyanic ac.*, 3x, has cured, according to Dr. Hughes, several cases of recent date. *Argentum nit.*, 1x, 2x, has effected several permanent cures. *Thaspium*, 3x, has, it is said, cured two genuine cases. *Œnanthe croc.* is also credited with a cure.

Therapeutic Indications.—*Indigo*.—Exceedingly depressed and melancholy; great languor and weariness; unusual feeling of prostration, especially in the lower limbs; *convulsions preceded by a fit of the blues*; the aura seems to come from the abdominal ganglia; sometimes the attack begins with dizziness.

Capparis cor.—Fit occurs suddenly, almost without warning; convulsions terrific, tonic and clonic, general, with foaming at the mouth, usually reddened with blood from a bitten tongue; very stupid for a long time after the fit has passed off.

Cannabis ind.—Fit immediately preceded by a feeling of extraordinary mental and physical vigor; *mind and body in a state of ecstatic exaltation*; on regaining consciousness violent shocks pass through the brain; some cases are preceded by active cerebral congestion, throbbing, ringing and buzzing in the ears, sensitive to light and noise.

Glonoïn.—Attacks immediately preceded by flushed face, headache, ringing in the ears and other evidences of cerebral hyperæmia; increased action of the heart and arteries; nausea and vomiting, dizziness and oppression of breathing; convulsions tend to become more and more frequent.

Belladonna.—Recent cases, with decided brain symptoms; previous to the attack, headache, throbbing in the temples, dilated pupils, intolerance of light, redness of the face; after the attack, anxiety, fear of imaginary things, disturbed sleep, vertigo, peevishness, flushed face, startings during sleep; convulsions commence in the upper extremities; clutching of the throat during the fit.

Cocculus.—Debilitated, nervous subjects; circulation sluggish, a sort of passive congestion, veins standing out like whip-cords; vertigo, with nausea; great lassitude, making it difficult to stand firmly; convulsions begin in the fingers and toes.

Cuprum.—Convulsions follow each other in rapid succession, the convulsive state rather remitting than completely intermitting; aura emanates from the region of the stomach; patient very restless after the attack, with headache, soreness of the flesh and prostration; convulsions begin in the extremities; hands and feet cold, face livid or pale; involuntary discharge of urine; *hysterical mood*.

Nux vom.—Stomach weak and disordered, tender to the touch; pressure over the stomach renews the attack; convulsive twitching in the limbs and trembling of the whole body; *spinal epilepsy*.

Hydrocyanic ac.—Recent cases, attended by sudden and complete loss of consciousness and sensation; body blue and cold; fit quickly merges into a comatose condition, interrupted only by a renewal of the convulsive movements, which usually begin in the extremities and afterward become general; great drowsiness and prostration after the fit.

Argentum nit.—Pupils dilated a day or two before the attack; aura rises slowly from the region of the stomach, which feels oppressed as by a load resting upon it; head feels dull and stupid; mind exceedingly depressed and melancholy; convulsions sometimes preceded by active cerebral congestion.

Thaspium aur.—Flushed cheeks, hot head, visible pulsations of the carotid and temporal arteries; great exhilaration or great mental depression; hysterical mood; headache, with nausea, precedes the attack.

Enanthe croc.—Convulsions attended with vertigo, nausea, vomiting, unconsciousness, coma or deep sleep; convulsions, with deathlike syncope, coldness as if dead; tetanic contraction of the muscles of the jaws and limbs; *convulsions epileptiform in all cases*, pupils dilated, eyeballs turned up, frothing at the mouth, face swollen and livid; *madness* with the convulsions.

Chininum ars.—Attack followed by cold perspiration, eructations and a sense of utter prostration.

Plumbum.—Convulsions preceded by numbness of the legs; swollen tongue; consciousness returns slowly and imperfectly; *chronic cases*.

Silicea.—Attack preceded by shaking of the left arm and great coldness of the left side of the body; slumber, with starting; spasms seem to undulate from the solar plexus toward the brain; violent screaming, groaning and foaming at the mouth, followed by warm perspiration, slumber and paralysis of the right side.

Auxiliary Treatment.—A large proportion of these cases belong to the reflex variety, and depend upon causes which can be removed during the interval between the attacks. One case of fifteen years' standing was accidentally cured in treating the piles. Another was caused by the larvæ of flies in the intestines, the removal of which speedily cured the patient. Many cases depend on some disturbance or irregularity of the menstrual function, which requires to be corrected. But the most numerous of those occurring among young persons, of both sexes, are the result of self-abuse, and require not only great care and surveillance on the part of parents and guardians, but moral treatment as well.

The fathers of medicine very properly laid great stress upon the importance of a suitable diet in epilepsy. Celsus and Aretœus advise "a soft diet free from crudities." Boerhaave says that "great frugality in diet cures epilepsy." Echeverria says that "diet and exercise are of more value than medicine."

Experience shows, however, that there is no specific diet suitable for all cases of epilepsy. Some recommend a meat, others a milk, farinaceous or vegetable diet; but the experiments of Merson, Gowers and others show that, applied indiscriminately, neither of these kinds is curative. At the same time there is no doubt that purely vegetable food and a milk diet has produced many a lasting amelioration. My own opinion, however, is that this sort of diet is best suited to full-blooded, plethoric patients, while meat diet is best adapted to weakly, anaemic ones. Nocturnal cases are also, as a rule, benefited by a stimulating meat diet, while those occurring during the daytime require an unstimulating, milk or vegetable diet. Excesses in eating and drinking should never be allowed; and as for alcoholic drinks, smoking, and even coffee and tea, they had best be entirely prohibited.

TETANUS.

Synonyms.—Spasm with Rigidity, Lock-jaw, Central Myelitis, Entasia Tetanos, Trismus; *Fr.*, *Tétanos*; *Ger.*, *Starrkrampf*.

Definition.—A disease characterized by a rigid contraction of the voluntary muscles, alternating with a greater or less degree of relaxation, caused by an irritated or overexcited state of the medulla oblongata and spinal cord.

Diagnosis.—Tetanus is not likely to be mistaken for any other natural disease, unless it be hysteria, which sometimes bears a slight resemblance to it. The history, duration and characteristic symptoms of the two diseases are, however, amply sufficient to distinguish them from each other. Not so, however, with toxic tetanus, especially that form of it produced by strychnia; and as the latter is frequently employed for purposes of murder and suicide, it is important to be able to discriminate between the natural and the artificial disease. In the former the spasm first takes the form of trismus or lock-jaw, while in the latter the lower extremities are first involved; the hands also are generally affected in these cases, while in the natural disease the upper extremities

usually escape altogether. Not only so, but the duration of tetanus is usually much greater than that of the tetanoid affection produced by strychnia, which generally proves fatal within less than an hour of its commencement.

Pathology.—Various lesions of the spinal cord have been discovered after death from tetanus, the most important of which consist in an enlargement of the bloodvessels, together with granular disintegration of the nerve-tissue; but as many cases occur in which no pathological changes can be detected, at least nothing sufficient to account for the convulsions, it is by no means certain that these alterations are the causes, or only the effects, of the tetanic manifestations. Indeed, there are circumstances which seem to indicate that the spinal cord is not the primary centre of reflex action in these cases, but that the morbid influence, whatever it may be, that causes the disease, is first transmitted to the medulla oblongata, and afterward extends to the cord.

Clinical Experience.—The following remedies have been used successfully in tetanus in a number of instances: *Belladonna*, *Atropine*, *Narcotin*, *Cicuta*, *Passiflora*, *Gelsemium*, *Physostigma*, *Stramonium*, *Lachesis*, *Hydrocyanic ac.*, *Angus. vera*, *Veratrum vir.*, *Arnica* and *Hypericum*. Among the homœopathic remedies which have greatly ameliorated cases of tetanus are: *Aconite*, *Hyoscyamus*, *Phytolacca*, *Kali brom.*, *Bryonia*, *Cuprum*, *Arsenicum*, *Nux vom.*, *Ignatia*, *Cannabis ind.* and *Curare*.

Therapeutic Indications.—*Belladonna*.—Cerebro-spinal congestion; stiffness of the jaws, with convulsive movements, dilated pupils, difficult deglutition, staring eyes, restlessness, spasmodic respiration, involuntary discharges of urine; sudden jerks and shrieks during sleep; opisthotonus; pleurostethotonos, especially to the left side.

Nicotinum.—Icy coldness of the limbs; *violent tetanic spasms*, succeeded by relaxation and trembling; extreme palor, nausea and prostration; coldness and shuddering of the whole body; dry, hot skin, with thirst and quick pulse, succeeded by cold skin, weak, thready pulse and labored, irregular breathing.

Cicuta vir..—Trismus; legs and arms flexed and rigid; abdomen distended and hard; spasms every half hour; edges

of the tongue covered with white ulcers; spasms of the œsophagus; spasms of a tonic character; paleness of the face during the spasm.

Passiflora incarn.—*Violent tetanus, with opisthotonus, trismus and convulsions* in a child two years old; produces, it is said, prompt, perfect and permanent cures in both men and horses, also in *trismus nascentium*.

Gelsemium.—Traumatic tetanus; stiffness of the jaws, with pain and stiffness in the back of the neck; spasmotic feeling in the pharynx and œsophagus, with difficulty of swallowing; constrictive feeling in the chest, with great difficulty of breathing; pupils dilated; cramps in the legs; convulsive action of the voluntary muscles; involuntary discharges of fæces and urine; abdominal muscles rigid; darting pains in the wounded leg, which jerks and twitches whenever it is touched; hard, feverish pulse; breathing irregular and hissing.

Physostigma.—Twitching and trembling of the muscles; trembling, convulsive action of the respiratory muscles; tendency to fainting; *alternate dilatation and contraction of the pupils, the former corresponding with the period of the spasm, and the latter with that of quiescence*; opisthotonus; no control over his urine, which is passed involuntarily.

Stramonium.—Traumatic tetanus; opisthotonus; apoplectic condition, with snoring, red face and deep sleep; body hot; urine copious; grinding of the teeth; contortion of the hands; shuddering; spasmotic constriction of the œsophagus; constriction of the chest, with difficult breathing; forehead cold; pulse scarcely perceptible; lower limbs drawn up with great force, then straightened out and so rigid that they could not be bent; eyes tightly closed, with occasional twitching; wounded hand swollen and erysipelatous.

Lachesis.—Tetanic look, with half-closed eyes and stiffness of the neck; trismus; opisthotonus; rigors; shooting pains in the back; throat sensitive to contact and swallowing almost impossible; two cases cured.

Hydrocyanic ac.—Tetanic spasms, with trismus, protruded and glistening eyes, bloated face and neck; *passive cerebral congestion*.

Angustura vera.—Violent tetanic paroxysms, with opisthotonus; *twitching and jerking along the back, like electric shocks*; tetanic spasms excited by the least touch, noise or the drinking of tepid water; thirst, without any desire to drink; pulse intermittent but rapid.

Veratrum vir.—Tetanus depending on pneumonia; opisthotonus; no relaxation of the muscles of the back for five days; heels almost touched the head like a hoop; body covered with a cold, clammy sweat; remedy not prescribed until after the febrile reaction had set in.

Arnica.—Traumatic tetanus; internal chilliness with external heat; pulse variable, mostly hard, full and quick; muscles and limbs twitch and jerk; weary, bruised feeling, making everything feel too hard; breathing short and panting; face hot, body cold; jerks and electric-like shocks; tremor of the limbs.

Hypericum.—Traumatic tetanus, with trismus and opisthotonus; swallowing difficult; hardness of the cervical muscles; face distorted; nostrils dilated; no relapse.

Auxiliary Treatment.—Warm baths; sweating, produced by passing hot air inside a covered framework adjusted to the bed by means of a tube connected with a heated cylinder; flannel cloths wrung out of hot water, of a temperature just bearable to the hand, and applied to the nape of the neck and along the spine; ice, and the spinal ice-bag; and the division or stretching of any nerve-trunk connecting the wound with the spinal cord, have all been resorted to with more or less benefit in different cases.

In order to support the patient during the severe illness through which he is passing, he should be made to swallow, if possible, an egg, or half an ounce of raw meat juice, mixed with three or four ounces of milk, every four or five hours during the day. If great exhaustion ensues, or the patient is unable to swallow, peptones, or beef-tea and brandy, should be given *per annum*.

HYDROPHOBIA.

Synonyms.—Dog Madness, Canine Madness, Lyssa, Rabies; *Fr.*, *La Rage*, *Hydrophobie*; *Ger.*, *Hundswuth*, *Tollwuth*, *Wasserschewu*.

Definition.—An acute spasmodic disease, allied to tetanus, produced by the inoculation of a specific animal poison, usually through wounds made by animals suffering with rabies, the symptoms indicating great disturbance of the central nervous system.

Diagnosis.—The diseases most liable to be mistaken for hydrophobia are tetanus, spurious hydrophobia and acute mania. In tetanus the result usually follows the injury within a week or ten days; in hydrophobia it seldom occurs short of two or three weeks, and is often delayed many months. In tetanus, again, the convulsions are continuous, and are usually combined with trismus; moreover, there is no mental disturbance, no increase in the secretion of saliva, and no well-marked respiratory spasm, as we find in hydrophobia.

Spurious hydrophobia, from the great resemblance of its symptoms to those of the genuine disease, is more difficult of detection. Such cases, however, usually occur in the hysterical constitution, present a less serious aspect, are free from any mental derangement except what arises from fear or anxiety, and are more easily subdued by treatment.

From acute mania the affection may be distinguished by the history of the case, the rapid course of the disease, and the persistency with which the convulsive paroxysms, which are never absent, return.

Pathology.—The morbid appearances in the medulla oblongata and spinal cord, as described by Allbutt, Benedek, Coates, Gowers and others, consist mainly of changes in the nerve-cells and vessels—the pressure of round cells; leucocytes in the perivascular spaces, in the nerve-tissue itself, and among the nerve-elements; granular degeneration, and even embolism; the changes being most marked about the respiratory centres in the medulla. None of these lesions, however, are characteristic; they throw little light on the essential nature of the disease, as similar changes are observed in other affec-

tions. Gower's opinion, which is substantially that of other pathologists, is, "that the vascular changes, from their variability and occasional absence, are probably secondary effects of the disturbed action of the nerve-centres produced by the poison carried by the blood."

Clinical Experience.—The most interesting, and, in some respects, perhaps the most important clinical experience in this disease, is that of M. Pasteur on the protective power of inoculation. The results, for which alone we have room, are so far, I am sorry to say, very unsatisfactory. They may be summed up as follows: (1) Animals which have been inoculated hypodermically by M. von Frich, after Pasteur's method, have not been protected from infection with the fresh virus of street rabies, and have only exceptionally escaped after intracranial infection, although inoculated during ten days with virus of progressive virulence (medulla from ten days to one day). This result is diametrically opposed to that claimed by Pasteur himself, who asserts that animals so treated are proof against any ordinary inoculation. (2) M. Pasteur, having attributed the unsatisfactory results obtained by M. von Frich to too slow vaccinations, recommended a more intensive mode of treatment, whereupon M. von Frich instituted a fresh series of experiments, which he carried out conformably to M. Pasteur's instructions, but with no more favorable result; all the animals died of rabies. (3) Most of the animals which were submitted to the preventive treatment after subcutaneous inoculation with street rabies died of the disease, even when the period of incubation was thirty-four days. These experiments show, as claimed by M. von Frich, that Pasteur's method of rendering animals refractory to rabies is not yet either sure or certain. There is not yet a sufficient scientific basis for the application in man of a preventive treatment after the bite of a rabid animal. It is, moreover, quite possible that the preventive treatment, at any rate the intensive method recently recommended by M. Pasteur, may itself transmit the disease.

As for the curative power of medicine in hydrophobia, we can only say that a "prodigious" number of remedies lay claim to it, as the following list will show:

Xanthium spin.—This remedy has been declared by Dr.

Grzyvala, of Podolia—for whose truthfulness Prof. Gubler, of Paris, vouches—a specific for hydrophobia. He says that during the Crimean war a family of twelve persons had been bitten by a hydrophobic wolf; six of them entered his wards at Olschanka, Podolia; they were treated with an infusion of the leaves of this remedy, and all recovered; the other six, who were treated by the actual cautery and the daily use of *Genista tinctoria* and other drugs, died in the course of from twelve to sixty days. He recounts many other cases, and says that out of at least one hundred cases he has not failed to save every one. Out of a herd of thirty oxen bitten by a mad wolf, eight succumbed to hydrophobia; the commissary of police obtained the “anti-rabic” powder of Dr. G. and gave three ounces daily to each of the others, saving every one of them.

Hoang-Nan.—M. Perrier, missionary at Tonquin for twenty years, declares that he has cured a young girl of 14 of hydrophobia with this remedy; she afterward grew up, married, and is now a mother.

Spiraea ulmar.—Kuhner, of Russia, says that during a frantic paroxysm of hydrophobia a patient devoured a piece of the root of this plant; fifteen minutes afterward he became conscious, vomited, and fell into a profound sleep of twenty-four hours, and was well afterward.

Inula helen.—Dr. Helmuth cites the following cure by this remedy: In 1858 a policeman, so far gone with hydrophobia as to have to be held in the carriage in which he was being driven to Germantown to the residence of Mr. Frye, was treated exclusively with *Inula helenium* with success.

Tanacetum vulg.—M. Hayem, in the name of M. Peyraud, of Libourne, has shown the resemblance which exists between true rabies and what he calls tanacetic rabies, that is to say, rabies caused by the essence of tansy. “If rabbits,” says M. Peyraud, “on whom one has previously practiced the injections of tansy for a period of six, seven or eight days, be submitted to the action of rabic virus, it will prevent these animals from developing rabies. All of those to which I have given this preventive treatment, during the past eight months, have not been attacked by rabies, while two rabbits which I had inoculated with rabic virus without having previously submitted

them to the preventive tanacetic injections, have both of them succumbed to the true rabies, one very rapidly, the other more slowly." This is true homœopathy, and therefore a great improvement on Pasteur's method, even if all that is claimed for the latter is true, which is very far from being the case.

The following remedies have also been favorably reported upon in this disease: *Scutellaria* (Vanderveer), *Belladonna* (Adams), *Euphorbia* (Ruddock), *Lachesis* (Toothaker), *Stramonium* (Morgan), *Hydrophobin* (Berridge), *Tabacum* (Norton), *Cannabis ind.* (Ruxton), *Mercurius corr.* (De Capua), *Gelsemium* (Dubbs), *Simaruba Cedron* (Vallant), *Genista lutea* (Fox), *Cantharis* (Hartlaub), *Hyoscyamus* (Hahnemann).

Therapeutic Indications.—These will be found in previous sections, especially under the heads of cerebral and spinal *hyperæmia*, *convulsions* and *tetanus*, which see.

Auxiliary Treatment.—**Prophylaxis.**—Immediately after a person is bitten by a rabid animal the wounded part should be forcibly sucked, or, if favorably situated for the purpose, a cupping glass may be applied; then, instead of excising the wound, which endangers the infection of the freshly cut surface by virus from the blade of the instrument, the pure *nitrate* or *chloride of silver*, or other caustic, should be applied to every recess of the wounded part, so as to decompose the virus and destroy the vitality of the affected tissues. This plan is recommended by Youatt, who was himself bitten several hundred times by rabid dogs without becoming infected after applying the caustic in this manner. He prefers the chloride of silver for the purpose, as being a more efficient caustic than the nitrate. If the patient can be induced to submit to it, and the case is a very suspicious one, it is safer to use the actual cautery, in the form of a white-hot iron. A poultice should then be applied until sloughing of the eschar occurs, after which, if deemed advisable, the wound may be kept discharging, by any simple stimulating ointment, until the period of greatest danger is passed, or until it fills up with healthy granulations.

Among other accessory measures which at different times have proved of greater or less benefit in these cases, the most

efficient are the steam bath, ice to the spine, Faradization and galvanism.

CHOREA.

Synonyms.—St. Vitus's Dance, St. Guy's Dance, St. John's Dance, Chorea Sancti Viti, Chorea Minor; *Fr.*, *La Chorée, Folie Musculaire, Danse de St. Guy, Danse de St. Witt*; *Ger.*, *Veitstanz*.

Definition.—An affection of the nervous system, characterized by a succession of uncoördinated movements of the voluntary muscles, occurring almost exclusively in the waking state, in almost all parts of the body, and either entirely withdrawn from the sphere of volition, or but little under its control.

Diagnosis.—Partial choreic movements, or local choreas, are apt to be mistaken for true chorea; they differ from the latter not only by being definite spasms located in one part—as, for example, twitchings on one side of the head or face—but in being usually incurable. Chorea bears some resemblance to tremor, and especially to that form of it called *paralysis agitans*, but these disordered movements are usually confined to adults and the aged, besides being more rhythmical and restricted. Chorea differs from hysteria by its proneness to attack children, and by the movements being little if any under the control of the will, while hysteria is mostly a disease of adult life, and is ameliorated rather than aggravated by voluntary exertion. Chorea magna is an entirely different affection from chorea minor, or what is commonly called chorea, consisting as it does of a series of complicated movements occurring at irregular intervals, and exactly simulating voluntary movements—such, for example, as taking three steps forward and then making a low bow, or rising from a chair, jumping over it, and then sitting down again as if nothing had happened—actions which result from an entirely uncontrollable impulse. These forms of so-called chorea have at times prevailed as regular epidemics (*tarantismus*), and partake more of the hysterical nature than they do of true chorea.

Pathology.—The fact that ninety-nine out of a hundred cases of chorea minor are curable, renders it almost certain

that no serious lesion, such as minute emboli, softening, etc., exists in either of the great nerve-centres. It is true that in a few fatal cases post-mortem examination has revealed such changes, but these are the exception rather than the rule. Besides, fright is one of the most common causes of the disease, and surely fright is not capable of producing serious organic disease. I am therefore disposed to regard the choreas of childhood as functional neuroses, often associated with the rheumatic diathesis, or with cardiac disease depending upon it, together with an enfeebled state of the nervous system, the result of anaemia impairing the nutrition of the nerve-centres.

Clinical Experience.—The remedies which have received the strongest indorsement of the profession in this disease are: *Mygale las.*, *Agaricus mus.*, *Cimicifuga*, *Causticum*, *Pulsatilla*, *Coccus*, *Nux vom.*, *Ignatia*, *Hyoscyamus*, *Tarantula*, *Calcarea*, *Cuprum*, *Zincum*, *Stramonium*, *Asterias rub.*, *Sulphur*, *Veratrum vir.* and *Cina*.

Therapeutic Indications.—*Mygale*.—Muscles of the face jerk and twitch; eyelids and mouth open and close in rapid succession; in trying to put the hand to the mouth it is arrested midway and jerked down; gait unsteady; legs in motion while sitting, and dragged while attempting to walk; constant motion of the whole body; indicated in all typical cases not especially calling for some other remedy.

Agaricus.—Marked and frequent nictitation or twitching of the eyelids; spasmodic movements, from simple involuntary motions and jerks of single muscles to a dancing of the whole body; trembling of the limbs; soreness of the spine; redness of the eyes; involuntary movements cease while asleep; symptoms worse during a thunderstorm.

Cimicifuga.—Mind greatly depressed; great nervousness; muscular twitchings resembling chorea, the left side being most affected; pain under the left breast; tenderness over the last cervical vertebra; tenderness over the ovarian regions; especially suited to cases occurring in young girls at or about the age of puberty, or when there are present symptoms indicative of menstrual disorder.

Causticum.—Choreic movements even in the night; move-

ments involve the right side of the body more than they do the left; the muscles of the tongue are affected so that the speech is thick, and the words have to be jerked out; there is a marked paretic condition of the affected parts; especially indicated in rheumatic cases, or when resulting from cold or exposure.

Pulsatilla.—Symptoms due to disease of the genital organs, such as amenorrhœa, dysmenorrhœa, ovaralgia, etc.; choreic movements occurring in young girls at or near puberty.

Coccus.—Movements chiefly confined to the right side of the body, as the right arm or the right leg; menses dark and scanty; thin, scrawny girls, with irregular periods, and subject to venous or hæmorrhoidal congestions; tendency to paralysis of the affected parts.

Nux vom.—Numbness of the affected parts, also formication; impaired appetite; constipation; vague flying pains about the chest and legs; movements renewed by the least touch, but diminished by strong and steady pressure; symptoms worse early in the morning; chronic cases, especially such as have been under old-school treatment.

Ignatia.—Cases which have resulted from depressing emotions, such as grief, fright, etc.; cases attended by sighing, sobbing or a disposition to be alone; most useful when the left side is affected; worse after eating; better when lying on the back.

Hyoscyamus.—The twitchings, which are mostly local or confined to certain parts, as the face, the eyelids, the arm, etc., are especially violent and jerky; disposed to laugh and be talkative; is extremely silly and agitated; worse after eating, which is performed hastily.

Tarantula.—Choreic movements general, or else crossed, as the right arm and left leg; head drawn downward; involuntary discharges of urine; grimaces of the mouth; is in constant motion; can run better than walk; trembling of the body; movements continue even at night, but subside under the influence of music.

Calcarea carb.—Scrofulous habit, light hair, blue eyes, cold, damp feet; involuntary movements often limited to one side

of the body; apt to stumble or fall down; sore eyes; white stools; bloated abdomen.

Cuprum.—Legs and arms in perpetual motion, with constant motion of the muscles of the face; delicate constitution; face and tongue pallid; irregular movements commence in one limb and spread to other parts, sometimes involving the whole body, at others limited to only one side of it; great mental exaltation; better when lying down or when asleep, but never cease altogether.

Zincum.—*Chronic chorea*, embracing all the voluntary muscles of the face, trunk and limbs, so that she was unable to eat, walk or lie; had had all kinds of treatment, embracing chalybeates and other tonics; general health greatly impaired.

Stramonium.—Crossed, irregular movements of the voluntary muscles, as, for example, the right arm and left leg; head and neck in constant motion; patient leaps about, making the most grotesque gestures; weeps, laughs, sings, prays, stammers and does many silly and unusual things; handles the genital organs; is violently agitated by unfounded fears; not disposed to talk, or unable to do so; the involuntary movements greatest when awake, but may continue when asleep.

Asterias rub.—Trembling and jerking movements of all the limbs, rendering her unable to feed herself or to walk; frequent, clear, profuse micturition; from fright and mental depression.

Sulphur.—*Chronic cases*, and after suppressed eruptions; in one case the patient was disposed to admire common objects, raving over them; she was pale and poorly nourished; had existed six months; patient is apt to be irritable, peevish and obstinate.

Veratrum vir.—Choreic movements approach the form of eclampsia, are very violent and continue during sleep; waked up by a continual champing of the teeth; lips covered with foaming saliva; inability to swallow; great sexual excitement.

Cina.—Violent twitching of the muscles, with scintillation of the eyes, which flash like those of a snake; the choreic movements commence with a shriek; tongue, larynx and œsophagus affected, causing a clucking sound, like that of water poured from a bottle; when caused by worms or onanism.

Cicuta.—Twisting, jerking and distortion of the limbs, sometimes accompanied by screams; sudden rigidity of the limbs.

Auxiliary Treatment.—Care should be taken to remove, as far as possible, all exciting causes of the disease, such as intestinal worms, pernicious practices, irregular hours, over-stimulation of body and mind, etc.; and as the disease is essentially one of nervous debility, we should aim to strengthen and build up the system by nutritious diet, pure air, sunshine, regular hours, freedom from excitement, and such other hygienic influences as the case in hand may require. Care should also be taken not to allow the patient to associate with others similarly affected; neither should the patient's mind be allowed to dwell upon the disease. Chorea patients should never be scolded, as they have very little, if any, control over their movements, and harsh words will do far more harm than good.

Chorea arising from spinal irritation will be benefited by the treatment recommended for that disease, which see. Electricity is highly lauded by some authorities. Benedict says that out of twenty cases that he treated with the constant current not one failed to recover; others, however, have been less successful with it. Hysterical chorea requires the special treatment recommended for *hysteria*, which see.

HYSTERIA.

Synonyms.—Hysterics, Hysteric Fit, Vapors, Malum Hystericum; Fr., *Hystérie, Maladie Imaginaire, Mal de Mère*; Ger., *Hysterie, Mutterbeschwerde*.

Definition.—A disordered state of the nervous system, tending to chronicity, characterized by acute attacks of functional spasm and paralysis, anæsthesia and hyperæsthesia, resulting from irritative impressions, sometimes mental and sometimes physical, acting on the emotional centres of the brain.

Diagnosis.—The diagnosis of hysteria, multifarious as are its symptoms and manifestations, resolves itself simply into the detection, as such, of a purely emotional disease. This, as a general rule, is not difficult, provided the observer bears in mind that the phenomena are, in most cases, imperfect imita-

tions of real diseases. In nearly every case there is something either contradictory or exaggerated about them which betrays at once their real character. Occasionally, however, owing to the nature and gravity of the symptoms, it becomes necessary to distinguish carefully between a fit of hysteria and one of epilepsy, of hystero-epilepsy or of puerperal convulsions. The following table gives the differential diagnosis between hysteria and epilepsy:

Hysteria.	Epilepsy.
Loss of consciousness gradual and partial or apparent.	Sudden and complete.
Face flushed or unchanged, no froth on lips, eyelids closed, eyeballs fixed, no grinding of teeth or biting of tongue; pupils react readily.	Livid face, froth at mouth, eyelids half open, globes rolling, teeth grinding, tongue bitten; more or less insensibility of pupils to light.
Countenance not distorted.	Countenance distorted.
Sighs, laughs or sobs.	Shows no feeling.
Globus hystericus.	Aura epileptica.
Paroxysm longer than in epilepsy, usually wakeful and depressed in spirits.	Short paroxysm, followed by heavy, comatose sleep and dull intellect.
Rarely occurs at night.	Frequently occurs at night.
Often connected with uterine or menstrual disorders.	Not necessarily connected with the uterus, though a paroxysm often occurs at the menstrual period.
<i>Hystero-Epilepsy.</i>	Will never modify or stop the attack.
Pressure upon the ovaries will frequently arrest the paroxysm.	
Thermometer never rises above 38.5° C.	Thermometer always rises above 38.5° C., sometimes several degrees higher.

Hysterical convulsions may be distinguished from puerperal eclampsia, not only by the previous history of the case, but by the presence in the latter of complete unconsciousness and albuminuria. Hysterical paralysis may be distinguished from the various forms of cerebral and spinal paralysis by the symptoms peculiar to the latter. This will sometimes necessitate a continued watching of the hysterical disorder, which is usually more variable and more influenced by emotional excitement than the true disease.

Pathology.—Although no constant pathological alterations have yet been discovered in either the brain or spinal cord, the symptoms show clearly that both of these great nerve-centres are involved in every well-developed case of the disease. The psychical and emotional symptoms point unmistakably to the brain as their origin, while various forms of spasms, paralysis and hemi-anæsthesia can only be explained by referring the centre of diseased action to the same organ. In like manner the primary centre of reflex action can, in many cases, be traced directly to the spinal cord, the reflex action gradually spreading from the seat of irritation so as to involve adjacent groups of muscles under the control of that organ. That the peripheral nerves are not the primary seat of the hyperæsthesia is shown by the fact that the symptom has continued to exist after the affected limbs have been amputated. These considerations, as well as others equally conclusive which might be adduced, prove that the cerebro-spinal centres are the parts especially involved in the irritation which disturbs the harmonious action of the various parts of the nervous system in this disease, but what the special condition of these centres is, whether one of congestion, anæmia or some change analogous to that which gives rise to insanity or epilepsy, is as yet undetermined.

Clinical Experience.—*Ignatia amara* comes so near to being a universal specific for hysteria that one seldom has occasion to resort to any other remedy. *Gelsemium*, *Belladonna*, *Aurum*, *Cimicifuga*, *Nux vom.*, *Moschus*, *Sepia*, *Aconite*, *Lachesis*, *Chamomilla*, *Pulsatilla*, *Phosphorus*, *Valerian*, *Platina*, *Asafætida*, *Stramonium* and many other remedies have proved curative in particular cases.

Therapeutic Indications.—These will be found under the several diseases simulated by the disorder, especially *convulsions*, *spinal irritation*, *paralysis* and *neuralgia*, which see.

Auxiliary Treatment.—Whatever may be one's opinion as to the essential nature of this disease, no one will deny that in the great majority of cases the mind exercises a controlling influence over it; it follows, therefore, that moral treatment is of paramount importance. Many cases have been cured by

one physician which had resisted the treatment of other practitioners equally competent, simply because the former, unlike the latter, had enlisted the patient's exertions in her own behalf. To do this the physician needs, first of all, to acquire the respect and confidence of his patient, after which he has only to direct and his directions will be obeyed ; but if, on the other hand, he fails in this regard, either through lack of tact or otherwise, his directions will most likely be ignored, if not entirely reversed. Besides, the co-operation of the patient is all the more necessary in order to successfully overcome the bad habits and banish the hurtful influences which are almost invariably associated with and tend to perpetuate the disease ; such as the various forms of dissipation connected with fashionable life, the use of stimulants, late hours, unwholesome reading, unsuitable occupations, the injudicious kindness of home friends, whose mistaken sympathy often leads them to foster rather than to counteract the natural inclinations and morbid desires of the patient. We have not the room to enlarge further upon this fruitful topic, but are free to say that unless the practitioner has the tact to overcome these difficulties his efforts to cure his patient will, nine times out of ten, result in utter failure.

HYSTERO-EPILEPSY.

Synonyms.—Epileptiform Hysteria ; *Fr.*, *Hystéro-Épilepsie* ; *Hystérie Épileptiforme* ; *Ger.*, *Hysteroepilepsie*.

Definition.—An unusually grave form of hysteria, the violence of the convulsions resembling that of epilepsy, and characterized by the most intense and remarkable forms of anaesthesia, paralysis and muscular contraction.

Diagnosis.—Hystero-epilepsy differs from simple hysteria chiefly in the intensity of the symptoms, which give an epileptiform character to the paroxysms. It differs from pure epilepsy in never, even when of many years' duration, leading to dementia ; the intellect always remains unimpaired. The epileptic group of symptoms is never complete, and never appears in connection with, or under the form of, the *petit mal* ; it never

assumes the form of *vertigo-epileptique*. Compression of the ovaries always modifies the attack, and sometimes completely arrests its effects, which results are never produced in true epilepsy. In hystero-epilepsy, even when the disease lasts a long time, the thermometer never rises above 38.5° C.; while in true epilepsy, under similar circumstances, the thermometer rises much higher than this, even when the disease is not complicated with cerebral or meningeal congestion, in which latter case the temperature still continues to rise until it may indicate a fatal termination.

Pathology.—As the same causes that give rise to hysteria operate to produce hystero-epilepsy in certain neurotic constitutions, the pathology of the disease is no doubt of the same general character; the only difference, so far as our present knowledge extends, is that the ovaries constitute the special primary centres of reflex irritation, whence originate the cerebral and spinal symptoms. The blood, also, may be more or less depraved, as in simple hysteria, but this point has not yet been definitely settled.

Clinical Experience.—The remedies which have so far given the best results in hystero-epilepsy are: *Cannabis ind.*, *Ignatia*, *Gelsemium*, *Amyl nit.*, *Moschus*, *Tarantula* and *Hyoscyamus*.

Therapeutic Indications.—The same as in *convulsions*, *spinal irritation*, *epilepsy* and *hysteria*, which see.

Auxiliary Treatment.—MM. Charcot and Bourneville have obtained curative results by the continuous application of the ice-bag compress over the ovarian region. Whenever there is an ovarian aura the breaking out of the fit can be prevented by it.

Dr. Petit has treated the disease successfully by metallo-therapy. He gives *Aurum chlor.* internally, and places disks of gold on the limbs, causing in one case a complete cure, so that within a year after the commencement of treatment the patient married. In this case the left arm was contracted during two years, there were general amyostenia and anæsthenia, and the patient suffered intensely from ovarian pain, vomiting and spasmodic contractions of various muscles, including those of the cesophagus and vagina.

CATALEPSY.

Synonyms.—Morbus Attonitus, Carus Catalepsia, Hysteria Cataleptica; *Fr.*, *Catalepsie*; *Ger.*, *Convulsivische Starrsucht*.

Definition.—A peculiar form of nervous disease, allied to hysteria, occurring in paroxysms, and characterized by a loss, more or less complete, of consciousness, sensibility and voluntary motion, during which the limbs are rigid and remain in the exact position in which they chanced to be at the moment of attack, or in that in which they are afterwards placed.

Diagnosis.—The above definition is sufficiently precise to prevent the possibility of mistaking this disease for any other, unless it be some other hysteroid affection, such as ecstasy, hysterical unconsciousness, etc., a matter of no practical importance, as these conditions are all of a similar nature and frequently pass from one into the other.

Pathology.—As in hysteria there appears to be a partial loss or diminution of will power, so here the controlling power of the will appears to be completely lost; in other words, there is not only loss of consciousness and sensibility, but complete paralysis of the will. “My sensations,” said one who had recovered, “were too feeble to call forth an exercise of will.” That this is the true explanation is proved by the fact that the condition can be produced artificially. Charcot and others have shown that when thrown into the hypnotic state the cataleptic condition can at any moment be brought about by the mere suggestion that the subject no longer has any power to move his own limbs.

Clinical Experience.—The only remedies I can find to which cures have been attributed are: *Cannabis ind.*, *Artemisia vulg.* and *Aranea diad.*

Therapeutic Indications.—Same as in *hysteria*, which see.

Auxiliary Treatment.—According to Prof. Rosenthal, Faradization of the face by metallic conductors not only restored the consciousness, but brought about complete recovery from a cataleptic attack in a woman whose death had already been certified by a country practitioner.

MULTIPLE CEREBRO-SPINAL SCLEROSIS.

Synonyms.—Disseminated Cerebro-spinal Sclerosis; *Fr.*, *Sclérose en Plaques Disséminées*; *Ger.*, *Multiple Cerebro-spinale Sklerose*.

Definition.—A disease characterized by overgrowths of neuroglia, in the form of plates or nodules, of varying size and shape, disseminated throughout the spinal cord, and also through different parts of the brain.

Diagnosis.—The most characteristic mark of this form of sclerosis is the universal trembling which ensues on voluntary movements, and the fact that the trembling of the head, of the upper and lower extremities, as well as of the whole body, is considerably increased with every motion. Even the tongue trembles when the patient is requested to protrude it, while disturbances of speech are a constant characteristic clinical symptom.

Pathology.—In describing other forms of sclerosis we have repeatedly stated that the essential morbid process consists in hypertrophy or proliferation of the neuroglia, at the expense of the proper nerve-tissue. In this form the sclerosed tissue appears, as above stated, in the form of plates or nodules in different parts of the brain and spinal cord.

Treatment.—See the various forms of *cerebral* and *spinal sclerosis*, including *locomotor ataxia*, pp. 42, 102–107.

SECONDARY CEREBRO-SPINAL SCLEROSIS.

Synonyms.—Secondary Cerebro-spinal Degenerations, Secondary Degenerations of the Spinal Cord, Ascending and Descending Degenerations; *Fr.*, *Dégénérations Secondaires de la Moëlle Épinière*; *Ger.*, *Secondäre Erkrankung Einzelner Rückenmarksstränge, Secondäre Cerebro-spinale Sklerose*.

Definition.—Sclerotic degenerations affecting certain portions of the cerebro-spinal axis, resulting from trophic lesions situated either in the brain or spinal cord; if in the former they give rise to descending degenerations, if in the latter to ascending ones.

Diagnosis.—Secondary cerebro-spinal sclerosis may be diagnosed by the concurrent existence of the foot phenomenon, the tendon reflex and the phenomena of associated movements.

Pathology.—The degenerative changes are usually confined to the white substance, and consist in atrophy and degeneration of nervous filaments, the formation of granular corpuscles and the characteristic proliferation of the neuroglia. When the gray matter is involved the nerve-cells undergo more or less disintegration and wasting; muscular atrophy is then associated with the rigidity and contraction resulting from degeneration of the white substance.

Treatment.—Consult the various forms of *cerebral* and *spinal sclerosis* already given, especially *locomotor ataxia*, pp. 42, 102–107.

GENERAL PARALYSIS.

Synonyms.—General Paresis, Paralysis of the Insane, Dementia Paralytica; Fr., *Paralysie Générale Incomplète, Périencéphalite Chronique Diffuse*; Ger., *Allgemeine Progressive Gehirnlähmung, Paralytischer Blödsinn*.

Definition.—A general paretic condition, accompanied by gradually increasing mental disturbance, incoördination of movement and loss of physical power.

Diagnosis.—The diagnosis is based upon the presence of convulsive tremors in the muscles of articulation at the commencement of the disease, the general and progressive paresis and loss of coördination, and the peculiar mental manifestations of aberration and extravagance.

Pathology.—There are usually more or less congestion and inflammatory thickening of the cerebral membranes, atrophy and degeneration of the cortical substance, especially of the anterior lobes, and wasting and amyloid degeneration of the ganglion cells, with hypertrophy of the neuroglia. Similar changes also occur in the posterior columns of the spinal cord, the cerebral nerves and the posterior roots of the spinal nerves.

In some cases there are signs of granular myelitis; large masses of fat globules, with hypertrophy of the septa of the cord. It thus appears that the disease is a diffuse inflamma-

tion of the brain and spinal cord, leading finally to destruction of ganglion cells and atrophy of the nerve-centres.

Clinical Experience.—*Argentum nit.* and *Plumbum* are entitled to the distinction of having arrested the degenerative process. *Belladonna*, *Physostigma*, *Coccus ind.*, *Badiaga*, *Oxalic ac.*, *Causticum*, *Gelsemium*, *Rhus tox.*, *Phosphorus* and a number of other remedies have ameliorated many of the symptoms.

Treatment.—See *meningitis*, *encephalitis* and the several forms of *paralysis* and *sclerosis* already described, especially *locomotor ataxia*.

PARALYSIS AGITANS.

Synonyms.—Shaking Palsy; *Fr.*, *Paralysie Agitante*, *Paralysie Tremblante*; *Ger.*, *Schüttellähmung*.

Definition.—A disease of the nervous system, characterized by tremor of the voluntary muscles, followed by paralysis of the same, both being progressive in their course.

Diagnosis.—Paralysis agitans is liable to be mistaken for chorea, senile tremor and multiple sclerosis. From the first it may be distinguished by the age of the patient and the history of the case; from tremor senilis, from being a disease of middle life instead of old age, and by its beginning on the head and attacking successively the lips, tongue and extremities; and from multiple sclerosis, by the latter being a disease of youth, and the tremor appearing only when motions are intended, whereas, in paralysis agitans, the tremor, though it may be increased from an intention to motion, or from mental excitement, is also observed during perfect rest.

Very rarely a case is seen, and it may even run its course, without any tremor being present. In these cases the disease is recognized by the other characteristic symptoms, such as fixed attitude, slow, delayed movements, difficulty in rising from the sitting posture, retropulsion, apropulsion, monotonous and mumbling speech, etc.

Pathology.—No characteristic pathological changes have yet been observed sufficient to account for the symptoms of this disease. Various coarse lesions have not infrequently been met with in both the brain and spinal cord, but those

hitherto observed have been such only as are frequently present in those who die of old age where no such symptoms are present. Although in many cases, however, the results have been negative, the fact that some observers have found sclerosis in various parts of the brain and spinal cord renders it highly probable, I think, that a certain degree of hypertrophy of the neuroglia constitutes the essential element of the disease.

Clinical Experience.—I can find none of our remedies to which cures of this disease have been attributed except *Plumbum*, *Mercurius* and *Tarantula*. Good results, however, have followed the administration of *Argentum nit.*, *Baryta carb.*, *Hyoscyamus*, *Physostigma* and *Zincum*.

Treatment.—Compare the various sections devoted to paralysis and sclerosis, especially *multiple cerebral* and *posterior spinal sclerosis*, pp. 42, 107.

PART IV.

DISEASES OF THE PERIPHERAL NERVOUS SYSTEM.

NEURITIS.

Synonyms.—Inflammation of a Nerve; *Fr.*, *Névrite*; *Ger.*, *Entzündung der Nerven*, *Nerventzündung*.

Diagnosis.—The pain does not intermit as in neuralgia, neither is it excessive, except in traumatic acute neuritis. The disease may also be distinguished from neuralgia by the increased temperature of the part to which the nerve is distributed, and by the history of the case. Anæsthesia, spasm and paralysis, which are common symptoms of neuritis, are absent in neuralgia. From cerebro-spinal diseases, in which these symptoms are present, it may be known by the circumscribed limits of the disease and by the absence of central symptoms.

Pathology.—The pathological changes are chiefly confined to the neurilemma or connective-tissue sheath of the nerve, which is found to be more or less injected and hyperæmic. Microscopical examination reveals, in addition to the increased vascularity, inflammatory proliferation of new tissue-elements with migrated leucocytes. These changes necessarily produce either irritation, or arrest or disturbance of nerve function, through compression of the nerve tubules by swelling of the nerve-sheath.

Clinical Experience.—*Aconite*, *Belladonna* and *Hypericum* have proved curative in the early stages of acute cases; traumatic cases usually yield promptly to the internal and external use of *Hypericum perf.* and *Calendula*.

Auxiliary Treatment.—The wet compress, hot fomentations and ice, locally applied, all have their advocates in this disease. The new operation of nerve-stretching may be of benefit in chronic cases.

NEURALGIA.

(IN GENERAL.)

Synonyms.—Nervous Pain, Neurodynia; *Fr.*, *Névralgie*; *Ger.*, *Neuralgie*.

Definition.—A functional disease of the nerves, almost always unilateral, usually confined to the origin, course or termination of one or more nervous trunks or branches, and unaccompanied by fever, inflammation or any appreciable organic lesion.

Diagnosis.—The diagnosis of neuralgia is not usually attended with any difficulty. When the pain takes the course of a nerve we know at once that it is neuralgic, but when it is confined to an organ, space or spot, other circumstances have to be considered: (1) the pain is always more or less paroxysmal; (2) it usually begins suddenly, is of a darting, lancinating or boring character, and is confined to the course of the nerve and its several branches; (3) the paroxysm develops spontaneously or without any marked exciting cause; (4) puncta dolorosa are observed in the majority of cases somewhere in the course of the nerve; and (5) vaso-motor, trophic and other disorders are occasionally associated with it.

Pathology.—The disease, *per se*, is a purely functional affection, but many cases occur in which there is reason to think that inflammation of the nerve-sheath is the starting point and proximate cause of the disease. This is often the case in sciatica, which is more frequently, perhaps, a perineuritis than a pure neuralgia. In these cases the pain is much more constant, that is, less paroxysmal than usual, and is more apt to be attended by paretic symptoms.

Clinical Experience.—In order to avoid undue repetition, we shall defer giving the usual therapeutic indications until we come to consider more in detail the leading varieties of the disease, substituting here a general *résumé* of clinical experience.

Spigelia.—Sharp and cutting pains, extending over the temples and forehead, with *profuse flow of water from the eyes*; sharp pain in the left side of the face and head, with intense pain in the eyeball.

Ammonium pier.—Violent boring pain in the right side of the head, spreading to the supraorbital and superior maxillary region, intermittent, commencing at 10 A.M., increasing till 2 P.M., and disappearing about 9 P.M.

Hamamelis.—Neuralgia of the *internal saphenal nerve* in the ascending form; severe pain on the internal side of the right knee, radiating from the internal condyle of the femur to the crural arch; lancinating and burning pains piercing the knee and extending to the groin.

Magnesia phos.—Typical *facial neuralgias*; pains intermittent, darting, lightning-like, suddenly appearing and disappearing, relieved by heat and pressure.

Kalmia.—*Neuralgia facialis*, nocturnal; sharp, shooting and twitching pains, commencing in the neck, going to the top of the head, then to the temples and right side of the face; relieved by cold, aggravated by heat.

Pulsatilla.—Right side of head and face; worse at night, with throbbing in the head; face flushed; external soreness; always occur when nursing.

Aconite.—Congestive forms of *trifacial neuralgia*; pains lancinating and burning; great agitation.

Arsenicum.—Neuralgia of the *fifth nerve, acute*; violent attacks of tearing, burning pain, occurring every five minutes both day and night, in the *second branch of the trigeminus, chronic; lumbo-abdominal neuralgia*.

Rhododendron.—Violent *prosopalgia*, spreading over the right side of the face from the teeth, and radiating over the mouth, eyes and ears, equally violent day and night; pains drawing, tearing, jerking; ameliorated by warmth, when eating, and for some time afterward.

Mezereum.—Dull, gnawing, sometimes severe boring pain all along the jaws and gums; cutting, shooting pain, returning every night on the left side, extending from the face to the ear, temple and neck, worse when warm in bed; severe supraorbital, intermittent, circumscribed, diurnal pain, beginning at 9 A.M., increasing until noon, subsiding about 4 P.M., of a heavy, aching character, sometimes extending into the left eye, causing a flow of tears.

Lachesis.—Dull, heavy, severe pain, commencing at 9 A.M. in the inner canthus of the right eye and extending outward and upward above the superciliary ridge, going off in the afternoon; skin extremely sensitive to touch; worse after sleeping.

Tartar emet.—Severe neuralgic pains in the right leg, following the *sciatic nerve*, pain running from above downward; muscles of the leg felt tense.

Bryonia.—*Trigeminal neuralgia* of the left side; pain acute, the motion necessary to speak or eat aggravated it to such an extent as to provoke a free flow of tears; severe pain in the right side of the head, face and jaws, worse in the morning, occurring during pregnancy.

Gelsemium.—Severe *orbital neuralgia*, occurring frequently, and accompanied by heaviness and drooping of the upper eyelids and great muscular weakness; severe paroxysms of *right facial neuralgia*, lasting six months; *neuralgia of the anterior crural nerve*, pain extending up to the iliac crest and down to the inner side of the knee, accompanied by tenderness between these points.

Iris ver.—*Trifacial neuralgia* in the left temporal region, extending down the ramus of the lower jaw into the teeth, pain sharp and cutting.

Veratrum alb.—*Neuralgia palpebrarum* of the right upper lid, greatly aggravated by pressure, the most delicate touch feeling as if hundreds of needle points were penetrating the cuticle of the lid; colic-like pains, followed by diarrhoea.

Sabina.—*Facial neuralgia* depending on paramenia; *general neuralgia*, occurring one week prior to menstruation, accompanied by frequent shudderings, burning heat in the whole body and great nervous irritability.

Bismuthum.—Severe *facial neuralgia*; pains burning, and greatly aggravated by warmth; relieved by holding cold water in the mouth.

Natrum mur.—*Facial neuralgia* of malarial origin; pains begin about 8 P.M. in the region of the right eye, the right side of the nose and the right frontal region, accompanied by high fever, great thirst and some nausea, subsiding with the abatement of the fever, and returning again the next evening.

Zincum phosphorus.—*General neuralgia* depending on nervous debility; neurotic constitution; loss of memory; loss of sleep from continued mental anxiety.

Kali cyanum.—*Left supraorbital neuralgia*, beginning daily at 9 A.M., reaching its height in less than an hour, and gradually declining just before noon, the decline being accompanied with considerable nasal discharge.

Aranea diadema.—*Lumbo-abdominal neuralgia* of a remittent character, exacerbation occurring between 8 and 11 A.M., and continuing until evening, attended at its height by excessive yawning, and at times by vomiting.

Plumbum metallicum.—*Neuralgia of the rectum*; pain of a drawing, gnawing character, worse toward evening and at night.

Kali bichromicum.—*Infraorbital neuralgia*; pain aggravated by motion, and especially by cold.

Conium maculatum.—*Infraorbital neuralgia*; tearing, cramplike pains, occurring in the evening and at night; *mastodynia*.

Nux vomica.—*Supraorbital neuralgia* of an intermittent character; sudden, agonizing, lightning-like pains, coming on in the morning and aggravated by pressure and motion.

Colchicum autumnale.—*Facial neuralgia*, involving especially the infraorbital nerve; pains of a tearing character, and accompanied with trembling and twitching of the lips and muscles of the face.

Auxiliary Treatment.—Special attention should be given to nutrition, especially in obstinate cases. Romberg's theory that "neuralgia is the prayer of the suffering nerve for healthy blood and more of it," has been abundantly verified. Hence patients suffering from debility (and nearly every such patient is more or less debilitated), scrofula, tuberculosis, or any other dyscrasie condition, should push the nutritive process to the utmost. One of Pretz's patients ate twelve times in twenty-four hours and improved under it. Tuberculous cases are usually benefited by a course of cod-liver oil. *Phenacetine* and other analgesic palliatives may prove more or less useful in obstinate cases.

Electricity, nerve-stretching, compression, sea-bathing, hot fomentations and the local application of Aconite, Menthol

and other stimulating and rubefacient applications have all done good in special cases. Gussenbauer ascertained that the great majority of trifacial neuralgias are due to reflex irritation. While some cases follow from sexual disease, malaria, tobacco poisoning, etc., ninety per cent. of trigeminal neuralgias result, he says, from habitual constipation, and may be treated successfully by cold water enemata and hydrotherapy.

TRIGEMINAL NEURALGIA.

Synonyms.—Neuralgia of the Fifth Nerve, Facial Neuralgia, Prosopalgia, Neuralgia Trigemini; *Fr., Tic-Douloureux; Ger., Neuralgie des Fünftenerven, Neuralgie der Trigeminus.*

Definition.—Neuralgia of one or more branches of the trifacial or fifth nerve.

Diagnosis.—Trigeminal neuralgia is most likely to be confounded with hemicrania. It may be readily distinguished from it, however, by the transient and shooting character of the pains and by their corresponding with the course and distribution of the different branches of the nerve. It is important, also, to distinguish trigeminal neuralgia from odontalgia, as many a sound set of teeth have been needlessly sacrificed to cure a supposed neuralgia which did not exist. In toothache the pain is usually continuous, or it is made worse when some of the teeth are subjected to pressure or to cold, and if closely examined defective places may be found in them.

Pathology.—The most diligent search has often failed to find anything abnormal about the trunk of the nerve or any of its branches. It is quite certain, however, that the sympathetic nerve is sometimes implicated in the attacks, for in no other way can we explain such symptoms as contraction of the pupils, conjunctival injection, flushing of the face and the constitutional disturbances sometimes met with; but it is not always certain whether these phenomena originate in the sympathetic system or are secondary to the trigeminal disease.

Clinical Experience.—See the preceding section.

Therapeutic Indications.—**Arsenicum.**—Severe *burning* pains, as if made with hot needles; pains appear toward night

and reach their greatest intensity near midnight; the anguish is sometimes so great as to compel the patient to get up and walk about; aggravated by noise and motion, also by cold water, which at first relieves; *ameliorated by hot applications.*

Mezereum.—Pains appear suddenly on moving the jaws, especially on *eating hot things*; stiffness of the muscles of the neck; aggravated by the lightest touch, but *diminished by hard pressure*; may affect any or all three of the trifacial branches.

Kali carb.—Burning pains, *with twitching of the muscles*, affecting preferably the mental and infraorbital branches; pains accompanied by beating of the temporal arteries; aggravated by eating sour fruit or by mental excitement.

Nux vom.—Lightning-like pains, with twitchings of the affected parts; violent, agonizing pains, obliging the patient to change his position frequently or to walk about; pains sometimes diminish on remaining quiet or on lying down.

Cuprum.—Lightning pains, with violent throbbing of the temporal arteries and great anguish; pains aggravated by touch.

Thuja.—Acute shooting pains throughout the course of the infraorbital nerve, producing flashes of heat in the face and a sensation of internal heat; cramping pains, with muscular twitchings; *convulsive movements of the upper lip* accompany the exacerbations of pain; ameliorated by motion and by the open air.

Bryonia.—Severe aching and shooting pains, which may extend to the ear, involving especially the left inferior dental branch; teeth and gums sore; sometimes, but not always, relieved by warmth; aggravated by chewing and by cold.

Ignatia.—Violent, agonizing pains, affecting especially the supraorbital nerve, occurring in sudden, short jerks, *diminishing or disappearing on moving the affected part, but immediately returning*; usually aggravated by pressure.

Aeonite.—Lancinating and burning pains, accompanied by painful tingling and prickling, redness of the affected parts and restlessness; pains sometimes *relieved by strong friction*, but aggravated by motion.

Phosphorus.—Lancinating, lightning-like pains, affecting

chiefly the infraorbital nerve, and accompanied by twitchings in the affected part; pains excited by the least movement of the part, especially by mastication, so much so as to cause the patient to refrain from eating or drinking.

Spigelia.—Pains extend to the eyes, which are more or less injected, and seem to be compressed in the orbit; pains aggravated by the slightest touch or movement.

Zincum.—Lightning pains, with muscular twitchings, affecting any or all three branches; eyes appear sunken, eyelids bluish, face pale, tongue congested; pain increased by pressure.

Argentum nit.—Pains of a sudden, rending character, extending into the orbit; globe feels as if it would be pressed out; face pale, sight impaired, affected parts somewhat anæsthetic.

Belladonna.—Cutting, throbbing pains, frequently extending into the eye and temple, or into the ear; affecting especially the right side of the face; worse in the afternoon and evening; aggravated by motion, light and noise.

Sepia.—Drawing, tearing pains, extending to the teeth, vertex and occiput, worse in the left side and at night; pains frequently extend to the ear; aggravated or renewed by either warmth or cold; suited to delicate, sensitive women, especially when caused by cold, or when the menstrual function is disturbed.

The following remedies may also be indicated: *Coffea*, *Glonoin*, *Causticum*, *Stannum*, *Colocynthis*, *Verbascum*, *Chamomilla*, *Chininum sulph.*, *Cimicifuga*, *Graphites*, *Rhus tox.* and *Lycopodium*.

Auxiliary Treatment.—*Galvanic electricity* is frequently of great benefit during the paroxysm, often relieving the most intense suffering at one sitting. The best mode of applying it is to place the wet sponge of the positive pole over the affected nerve, and that of the negative at any convenient point outside the painful area. The current, which should be weak at first, will be most effective by being gradually increased until a slight sensation of heat is produced. One or two applications a day, of not over ten minutes each, will be sufficient, except in chronic cases.

Nerve-stretching has been practiced successfully in a number

of instances, especially in the case of the supraorbital nerve, sufficient force being applied to liberate the nerve from any inflammatory or other form of compression, which may have interfered with its normal function.

There is no better local application in these cases than a solution of *Aconitia*, one grain to the ounce, which may be painted over the painful nerve with a camel's hair brush whenever required; or the strong tincture of *Aconite* may be rubbed in along the course of the nerve until the part becomes numb, repeating the process *pro re nata*.

MASTODYNIA.

Synonyms.—Neuralgia of the Mammæ, Mastalgia; *Fr.*, *Névralgie des Mamelles*; *Ger.*, *Neuralgie der Brustdriisen*.

Definition.—Neuralgia and hyperæsthesia of the mammary glands.

Diagnosis.—The disease is often confounded with intercostal neuralgia, which is but one of its various forms. Sometimes the slightest touch causes pain (*hyperæsthesia*); at others, the deeper structures are involved, and the affection partakes more of a neuralgic character.

Pathology.—The pathology of mastodynia is obscure. Sometimes small points on the glands are sensitive to pressure, due, probably, to enlargement of nerve-fibres. In other cases the affection appears to be seated in the dorsal region of the spine, from which the nerves supplying the mammary glands are derived. The constitutional conditions which give rise to it are, in the main, similar to those which favor neuralgia in other parts, namely, anæmia, chlorosis, hysteria, etc. Its relation to the sexual sphere is shown by its frequent association with disturbance of the sexual organism, especially at the menstrual period.

Clinical Experience.—*Phytolacca*.—When complicated with hyperæmia of the mammæ; the breasts are swollen and very sensitive to pressure, cannot bear to have them touched; neuralgic pain in the left ovary; worse during menstruation and lactation.

Bryonia.—When every movement of the arm causes pain in the corresponding mamma; also when complicated with ovaritis.

Arsenicum.—Periodical attacks, especially when complicated with malaria; also when the pain is relieved by heat and aggravated by cold.

Rhus tox.—Congestion of the mammae; the breasts feel hot and dry; the glands are swollen, and the pain is deep-seated, of an aching character and relieved by manipulation.

Pulsatilla.—When associated with menstrual derangement, or when there is a constant feeling of chilliness.

Aconite.—Cutaneous hyperæsthesia; great restlessness and irritation, especially in young girls.

Chamomilla.—Breasts hard and painful to the touch; hot perspiration under the mammae.

Cimicifuga.—Prickling sensations in the mammae; when associated with characteristic menstrual symptoms, or with pain in the head and back.

Compare, also, *Conium*, *Calcarea carb.*, *Kali carb.*, *Nitric ac.*, *Caladium*, *Murex*.

Auxiliary Treatment.—Fomentations, especially when medicated with the indicated remedy, are of great value in relieving the paroxysms of pain. Inunction of the breast with oil and quinine is said to be beneficial when the neuralgia alternates with neuralgia of other parts. It is also recommended to spray the mammae with cold water two or three times a day, employing friction afterward until the surface is brought to a glow.

COCCYGODYNIA.

Synonyms.—Neuralgia of the Coccyx, Coccydynia, Coccydynia; *Fr.*, *Douleur de Coccyx*; *Ger.*, *Kreuzendschmerz*.

Definition.—Pain, apparently of a neuralgic character, in the vicinity of the coccyx.

Diagnosis.—As the disease is almost exclusively confined to women, and sometimes occurs after difficult parturition, it is liable to be mistaken for hysteralgia. It may be distinguished from the latter by the fact that the patient cannot

bear the least pressure on the *os coccygis*, whereas in hysteralgia the favorite position is one that throws the entire weight of the body on this very part.

Pathology.—The disease is sometimes due to neuralgia of the coccygeal plexus, but this is not always the case. On the contrary, there is reason to believe that it is sometimes of a rheumatic and sometimes of an inflammatory nature.

Clinical Experience.—The remedies which have been most frequently prescribed for this affection are: *Cicuta*, *Acidum fluor.*, *Ruta*, *Zincum*, *Rhus rad.*, *Thuja*, *Conium* and *Carbo an.*

Therapeutic Indications.—*Cicuta*.—Tearing, jerking pains in the coccyx; stiffness in the lower limbs; when resulting from injury or pressure during confinement.

Acidum fluor.—Periodical aching in the coccygeal region; aching pain in the *os sacrum* and lumbar region, relieved by pressure, stretching and bending backward, especially the former.

Ruta.—Pain extending from the coccyx to the sacrum, as if caused by a blow or bruise.

Zincum.—Aching, pinching and lancinating pains in the coccygeal and sacral regions; pressure, tension and weakness in the sacral and lumbar regions; back cracks when walking.

Rhus rad..—Pain in the loins and lower spinal region, especially when moving the hips or when lying in bed at night; rheumatic cases, attended with a sense of weariness and languor, with stiffness.

Tarantula.—Burning, smarting and painful uneasiness in the coccyx after confinement, better when standing, worse from slightest pressure or motion.

Thuja.—Painful drawing sensation in the coccygeal and sacral regions and in the thighs, when sitting; sudden cramping pain in the lumbar region after long standing, and when attempting to walk it seems as though he would fall; after being seated awhile the drawing becomes so great as to hinder standing erect.

Conium.—Drawing and stitching pains in the lumbar, sacral and coccygeal region, followed by great weakness and nausea; drawing through the lumbar vertebrae when standing.

Carbo an.—Pain in the coccyx, which burns when the parts are touched; pain as from subcutaneous ulceration, worse on sitting or lying down; pressing, bearing-down pain in the coccyx, as if bruised.

Consult, also, *Silicea*, *Belladonna*, *Rhus tox.*, *Causticum*, *Cistus can.*, *Graphites*, *Paris quad.*, *Kreosotum*, *Cantharidis*, *Petroleum*, *Magnesia*, *Phosphorus*, *Lachesis*, *Muriatic ac.* and *Cannabis sat.*

Auxiliary Treatment.—Extirpation of the coccyx has been resorted to in very obstinate and painful cases, also subcutaneous section of the attached muscles and ligaments. Such extreme measures, however, are seldom necessary, as the homœopathically indicated remedy, aided, if necessary, by electricity, will cure the most rebellious cases. We have the testimony of Rosenthal that electricity alone cured a case of twelve years' standing.

SCIATICA.

Synonyms.—*Ischias*, *Femero-popliteal Neuralgia*; *Fr.*, *Névralgie Sciatique*; *Ger.*, *Hüftweh*.

Definition.—Neuralgia of the parts supplied by the great sciatic nerve and its posterior cutaneous branches.

Diagnosis.—Sciatic neuralgia is liable to be mistaken for rheumatism and for inflammation seated in and about the hip-joint. In the former case the pain is not spontaneous as in sciatica, but is always dependent on muscular action. Hip-joint disease is common in childhood and youth, while sciatica is seldom noticed under thirty years of age. But a slowly-developed chronic inflammation, usually called chronic rheumatism, occurring in elderly people, is what is most frequently miscalled sciatica. If the pain is not increased by pressing the surfaces of the joint together, or by gently rotating the limb, it may be, and probably is, sciatica; but it cannot be hip-joint disease. On the contrary, if the pain is made worse by this procedure, if there is great stiffness about the joint, so that the lower part of the body moves when an attempt is made to bend the hip-joint, and especially if the muscles in the vicinity of the joint are permanently contracted, then it is not sciatica, but an inflammation of the joint itself.

Pathology.—There is little doubt that very many cases of sciatic neuralgia are due to rheumatic inflammation of the nerve-sheath, yet it has often happened that in cases which during life have been supposed to be examples of this affection no trace of neuritis has been discovered. Be this as it may, sciatica, like every other form of neuralgia, is almost invariably associated with a depressed state of the system, and this, as before stated, has led to the general belief that the nervous system is not duly nourished. The correctness of this opinion would seem to be verified by the fact that a rich, nutritious diet, especially one rich in fats, always proves beneficial to the patient. I have an old chronic case now under treatment in a lady who remains entirely free from suffering so long as she continues to take cod-liver oil, but whenever she suspends the use of it for a few weeks the disease always returns with great violence.

Clinical Experience.—See preceding section on *neuralgia in general*, pp. 167-171.

Therapeutic Indications.—*Nux vom.*—Short, tearing and jerking pains, with trembling of the affected parts; stiffness of the affected limb, with sensation of paralysis; can lie best on the sound side; sometimes the pains diminish on lying down and keeping quiet, also after midnight; although the pains are aggravated by touch and by motion, they oblige the patient to move the affected part continually.

Colocynthis.—Lightning-like pains in the course of either sciatic nerve, but especially the left; aggravated by touch, motion, pressure or cold, also worse at night or when warm in bed, but ameliorated during the day by warm applications; pains accompanied by a *sense of constriction*; especially suited to acute cases occurring in the young.

Rhus tox.—Burning and tearing pains, attended by numbness, formication, sensation of cold and paralytic stiffness of the affected limb; pains aggravated by rest, especially rest in bed and at the beginning of motion, but *ameliorated by the continuance of motion*; has also cured cases aggravated by prolonged motion.

Bryonia.—Twitching pains extending from the lumbar region

to the thigh, with sweating; pains attended with shocks in the affected limb; pains aggravated by touch and motion, but often ameliorated by hard pressure or by lying on the affected part, also by cold water; is suited to both acute and chronic cases, even when there is atrophy of diseased limb.

Chamomilla.—Tearing, boring pains, occurring in *young and nervous persons*, especially when the pain is worse at night and is accompanied by a sensation of paralytic weakness; great irritability of mind and temper.

Plumbum.—Constant drawing and lancinating pains, increased by motion, heat and sudden pressure, but ameliorated by steady pressure; pains *always worse at night*, suited especially to chronic cases, or when there is a tendency to atrophy and paralysis.

Arsenicum.—Tearing and *burning pains*, with *nightly aggravations*; ameliorated by warm applications or by rubbing the affected part; aggravated by touch and motion; sometimes relieved by motion, especially at night, when the patient has to get up and walk the floor for relief; cannot lie on the affected side, and is very restless even on the sound side; is suited to both acute and chronic cases, especially when there is marked periodicity in their recurrence or aggravation.

Ignatia.—Throbbing, intermitting pains, with fever, preceded by chilliness, with thirst; paroxysms at first tertian, afterward quotidian; chronic cases, better in summer, worse in winter; suited also to acute cases where the patient is obliged to constantly change his position to relieve the pain.

Belladonna.—Severe lancinating pains, coming on in the afternoon or evening, or else worse from noon till midnight; aggravated by the *lightest touch*, but frequently relieved by steady pressure; worse from motion or mental excitement; better from warmth, after perspiring, when erect, or when letting the limb hang down.

Kali iod.—Pain in the hip, *causing the patient to limp*; nightly tearing pains in the right limb, aggravated by lying on the affected side; muscles of the affected limb spasmodically contracted: *pains ameliorated by motion*; chronic cases, with nocturnal aggravation, or when caused by mercury or syphilis.

Mercurius.—Nocturnal pains in the course of the sciatic nerve, attended by *nocturnal aggravation*, chills, numbness, formication and tendency to sweat, the perspiration giving no relief; patient restless and *constantly changing his position*; syphilitic cases. .

Valerian.—Pains so intense that it seems as though the thigh would break; unendurable when at rest, or when sitting or standing, but relieved by walking about.

Compare, also, the following remedies: *Terebinthina, Lycopodium, Veratrum alb., Sepia, Ferrum, Tellurium, Nitric ac., Thuja, Ranunculus, Ledum, Gnaphalium, Argentum nit., Calcarea carb., Coffea, Hepar sulph., Kali bich., Arnica, Cimicifuga, Iris vers., Causticum, Lachesis, Phytolacca, Gelsemium, Ruta, Stillingia, Menyanthes, Pulsatilla, Polygonum, Natrum mur., Natrum salic. and Mezereum.* For indications see the two preceding sections.

Auxiliary Treatment.—In addition to the accessory treatment given in the last two preceding sections (which see), we add the following: As regards *electricity*, a strong galvanic current will generally relieve those cases in which firm pressure over the affected part causes no pain; but where there is so much sensitiveness that slight pressure produces pain, strong galvanic currents usually do more harm than good. On the other hand, those cases which are aggravated or unrelieved by the galvanic current are almost always benefited by the Faradic or induced current, or by the static current.

Hypodermic injections of ether have cured some cases of sciatica, three drops of ether being injected at intervals of twelve hours. Debove claims to have succeeded in all his cases, both acute and chronic, by applying along the track of the nerve a *spray of methyl-chloride*, the degree of cold thus produced being as low as 22°; the line of congelation soon becomes red and warm, erythema and blisters usually developing, but a true eschar seldom.

In cases where pressure gives relief much benefit has been derived from the application of *roller bandages*. The bandage should commence at the toes and extend up to the middle or upper part of the thigh. If the pain is relieved by it, it should not be removed for several days, or until a cure is effected.

Extension and suspension have relieved several obstinate cases.

The diet should be of the most nutritious character, consisting of fresh meat, mutton, beef, game, poultry, fresh vegetables, and a *liberal supply of cream, butter and other animal fats*. As in neurasthenia, "the hungry nerve cries out for food," and if, owing to lack of power to assimilate, digestion becomes embarrassed, or if for any reason the amount of food taken is insufficient to satisfy this hunger, so that the "cry" is repeated, we cannot do better than to supply the deficiency with *maltinge*, or some similar preparation.

PHARYNGEAL PARALYSIS.

Synonyms.—Paralysis of the Pharynx; *Fr., Paralysie Pharyngée; Ger., Schlundkopflähmung.*

Definition.—Paralysis of the pharyngeal branches of the pneumogastric nerve.

Diagnosis.—Paralysis of the pharynx is usually associated with paralysis of neighboring parts, as in *labio-glosso-laryngeal paralysis* (which see). This is the case whenever the disease is located at the origin of the nerve in the medulla and involves adjacent nuclei. But the simple form may result from meningeal disease outside the medulla, from disease of the bones at the base of the skull, and is occasionally associated with diphtheria. A careful examination is usually sufficient to distinguish it from organic disease, with which alone it is liable to be confounded.

Pathology.—This is sufficiently indicated under the above head.

Treatment.—Remove the cause, *if possible*; if not, give *Causticum, Gelsemium, Cocculus, Lachesis, Silicea, Cuprum*, or such other remedy as may be indicated.

PARALYTIC APHONIA.

Synonyms.—Paralysis of the Larynx; *Fr., Paralysie du Larynx; Ger., Kehlkopflähmung, Stimmlosigkeit.*

Definition.—Loss of voice from paralysis of the laryngeal muscles.

Diagnosis.—A laryngoscopic examination will show that one or both vocal cords exhibit diminished motion, though no mechanical impediment exists. When both crico-arytenoid muscles are paralyzed the breathing is obstructed, and even when it is deep and prolonged the edges of the vocal cords are closely approximated. When the transverse arytenoid muscles are paralyzed, the posterior part of the rima glottidis opens in the form of a triangle. If only one vocal cord is paralyzed the voice is weak, deficient in *timbre* and volume, and sometimes limited to only a few notes. Some forms of paralytic aphonia may be diagnosed without the aid of the laryngoscope, as the reflex, the intermittent and the form caused by severe mental shocks; in this last form, although unable to articulate words, the patient is able to cough.

Pathology.—M. Bernard has shown by numerous experiments that while the spinal accessory specially influences the vocal muscles, and is therefore the true vocal nerve, the respiratory muscles of the larynx are under the control of the inferior and superior laryngeal nerves. He has shown, also, that paralysis of these nerves, instead of dilating the vocal ligaments, approximates them, so that every effort at inspiration tends to render the passage of air through the glottis more and more difficult by obstructing the laryngeal aperture. Hence any interference with the function of the recurrent or inferior laryngeal nerve—which is the nerve animating all the laryngeal muscles except the crico-thyroid—or with the function of the pneumogastric nerve itself, or of one of its branches, may produce aphonia.

Clinical Experience.—The principal remedies for *pure* paralytic aphonia have been found to be *Antimonium crud.*, *Lachesis*, *Phosphorus*, *Baryta carb.*, *Causticum*, *Kali bich.*, *Cuprum met.* and *Gelsemium*. Hysterical and nervous cases usually yield to *Ignatia*, *Stramonium*, *Nux mosch.*, *Belladonna*, *Nux vom.*, *Rhus tox.* and *Platina*. Catarrhal aphonia, which is not truly paralytic, is successfully treated with *Aconite*, *Belladonna*, *Arum tri.*, *Causticum*, *Gelsemium*, *Antimonium tart.*, *Argentum met.*, *Spongia*, *Iodatum*, *Mercurius*, *Bromium*, *Ammonium brom.*, *Kali bich.*, etc., etc.

Therapeutic Indications.—See *cerebral* and *spinal paralysis*, pp. 54, 92.

Auxiliary Treatment.—Paralytic aphonia will sometimes yield to a single application of the *galvanic* current; in most cases, however, several operations are required for the gradual restoration of the lost voice. As in other kinds of paralysis, the best form, usually, is the induced or secondary current (*Faradic*), but complicated cases sometimes do better with the primary current. *Massage*, the *magnetic pad* and other local measures have sometimes proved curative, and, though seldom necessary, may be tried in obstinate cases.

FACIAL PARALYSIS.

Synonyms.—Bell's Paralysis, Paralysis of the Portio Dura, Histrionic Paralysis; *Fr.*, *Paralysie Faciale*, *Diplegie Faciale*; *Ger.*, *Diplegia Facialis*, *Gesichtslähmung*.

Definition.—Paralysis of the facial muscles from disease or injury of the portio dura or of its nucleus.

Diagnosis.—As facial paralysis is often associated with hemiplegia, it is important to distinguish it from that disease. In facial palsy it is impossible for the patient to close his eye on the paralyzed side, which is not the case in the cerebral form. If the fifth nerve is paralyzed, and the patient be requested to close the jaws firmly, the muscles of the sound side will contract more energetically and promptly than those of the affected side; and if the third nerve is implicated there will be ptosis, with dilatation of the pupil and divergent strabismus.

Pathology.—In all cases lasting more than a few days evidences of defective nutrition may be detected in the nerve-trunk as it emerges from the stylo-mastoid foramen. The fibres within the pons, and the nucleus beneath the fourth ventricle, are sometimes damaged by tumors, haemorrhage, softening, etc. The nerve sometimes becomes inflamed from the extension of inflammation from the neighboring tissues; and occasionally its function is interrupted by pressure, caused by proliferation of the connective tissue of the neurilemma.

Clinical Experience—Facial paralysis has yielded to *Gelsemium*, *Causticum*, *Aconite*, *Kali chlor.*, *Kali iod.*, *Mercurius*, *Belladonna* and *Arnica*.

Therapeutic Indications.—*Gelsemium*.—Bruised pain behind and above the eyes; heaviness in the lids; impossible to close the eye or to raise the lid; paralysis of the facial muscles of the left side.

Causticum.—Twitching of the lids and eyebrows, especially the left; sensation of heaviness in the upper lid, with inability to close the eye firmly; especially suited to cases caused by exposure to cold.

Aconite.—Recent cases of a catarrhal or rheumatic origin; also when due to injury or to inflammation; anæsthesia of the affected muscles.

Kali chlor..—Paralysis of the facial nerve, especially when affecting the muscles of the cheek; pressure and tension in the face; cramplike drawing in the cheek; inability to puff out the cheeks or to blow with the mouth; especially adapted to idiopathic cases.

Arnica.—Facial paralysis due to injury, especially when there is much soreness of the affected parts; also when there are inflammation and hyperæsthesia of the facial nerve.

Kali iod..—Facial paralysis due to syphilitic disease in any of its forms.

Mercurius.—This remedy is also indicated in syphilitic facial paralysis, whether caused by pressure of nodes, inflammatory exudations, neuritis or syphilitic disease of the brain.

Belladonna.—Acute cases, attended with inflammation of the nerve, redness of the face, hyperæsthesia, throbbing and extension of inflammation from neighboring parts, as from the tonsils, parotid gland, etc.

Compare, also, *Ignatia*, *Graphites*, *Pulsatilla*, *Coccus*, *Nux vom.*, *Cadmium*, *Stramonium*, *Barium*, *Opium*.

Auxiliary Treatment.—Hammond, Butler and other electricians highly recommend *electricity* in this disease, the former saying that the affection cannot be cured without it. One pole of the *galvanic* current should be placed opposite the stylo-mastoid foramen, and the other passed over each of the affected muscles in succession, every day. The weakened muscles may

be supported, and the mouth drawn toward the centre of the face, by means of a double wire hook, curved at the ends and of the required length, one end of which should be placed in the angle of the mouth and the other over the ear of the affected side.

DIPHTHERITIC PARALYSIS.

Synonyms.—Postdiphtheritic Paralysis, Asthenic Paralysis; *Fr.*, *Paralysie Diphthérifique*; *Ger.*, *Diphtheritische Lähmung*.

Definition.—Paralysis associated with, or secondary to, diphtheria.

Diagnosis.—Although diphtheritic paralysis resembles that which is observed after other acute diseases, and also that which occurs in hysterical women, the simple fact that it was immediately preceded by an attack of diphtheria is sufficient to establish the diagnosis.

Pathology.—The fact that the nervous centres are not always implicated has led to the conclusion that the paralysis is peripheral rather than central in its origin. The affection appears to extend from the peripheric extremities of the nerves toward the nerve-centres; hence, when the nerve-centres are involved their implication is probably secondary.

Clinical Experience.—*Gelsemium* seldom fails to cure promptly all recent cases. *Argentum* is a good general remedy in these cases. *Antimonium tart.* acts promptly in patients suffering from œdema of the lungs. *Causticum* has cured cases of crossed paralysis following diphtheria, one arm and the opposite leg being affected; *Arsenicum*, where the paralysis was confined to the lower extremities; and *Nux vom.*, *Lachesis*, *Coccus*, *Arnica* and *Rhus tox.* when limited to one side of the body.

Therapeutic Indications.—See *paralysis in general*, pp. 54, 92.

Auxiliary Treatment.—Most cases of diphtheritic paralysis will yield to the methodical use of *electricity*; indeed, it may be laid down as a rule that when the muscles will respond to either the primary or secondary current recovery will speedily follow its application. When this is not the case the fault usually lies in the constitution, and we should endeavor, by

generous diet, fresh air, salt-water baths, exercise, etc., to revolutionize and build it up ; the paralysis will be found to gradually disappear as the health improves.

GLOSSOPLEGIA.

Synonyms.—Paralysis of the Hypoglossal Nerve, Paralysis of the Tongue ; *Fr.*, *Paralysie de la Langue*; *Ger.*, *Zungenlähmung*.

Definition.—Paralysis of the hypoglossal or motor nerve of the tongue.

Diagnosis.—As the hypoglossal nerve is the motor nerve, not only for the tongue, but for all the other muscles attached to the hyoid bone, with the exception of the stylo-hyoid, the mylo-hyoid and the middle constrictor of the larynx, we should, in estimating the character and position of the lesion, take into consideration the origin, course and distribution of the entire nerve. In disease of the nucleus of origin the paralysis, which is commonly bilateral, is associated with paralysis of the throat and lips, and there is usually more or less atrophy. If the disease is seated in the motor tract above the nucleus, that is, in the pons, crus or hemisphere, there is hemiplegic weakness on the side corresponding to the paralysis of the tongue. When the disease is at the surface of the medulla the paralysis, which is commonly unilateral, is associated with paralysis of the corresponding half of the palate and vocal cord ; and when the fibres of origin within the medulla are diseased, the paralysis of the tongue is associated with paralysis of the opposite limbs, so that the tongue deviates from the paralyzed side.

Pathology.—The disease is seldom, if ever, a primary affection ; hence the pathological condition is that of the associated disease or of the causal condition on which the paralysis depends.

Clinical Experience.—As in all secondary affections, the treatment should be that of the causal disease. Where no specific disease can be assigned the remedies which usually prove most beneficial are: *Argentum*, *Causticum*, *Plumbum*, *Baryta carb.*, *Opium*, *Nux mosch.*, *Dulcamara*, *Stramonium*, *Belladonna* and *Hyoscyamus*.

Auxiliary Treatment.—The occasional application of electricity to the tongue is useful in some cases. The most convenient way of applying it is by means of Türck's tongue depressor, the blade of which should be insulated, where it comes in contact with the lips, by a coating of sealing-wax.

FACIAL SPASM.

Synonyms.—Spasm of the Facial Muscles, Mimetic Spasm, Convulsive Tic; *Fr.*, *Spasme Faciale, Tic Convulsif*; *Ger.*, *Ge-sichtskrampf*.

Definition.—Tonic or clonic contractions of one or more of the muscles supplied by the facial nerve.

Diagnosis.—All spasms of the facial muscles not constituting a part of a wider convulsive movement, as in epilepsy, hysteria, etc., are to be regarded as facial spasms.

Pathology.—Some cases are purely functional, such as nictitation, or involuntary winking. Others are due to irritation of the trunk of the nerve by pressure of foreign growths, caries of the temporal bone, etc. But the majority are of reflex origin, and are due to cold, intestinal worms, etc.

Treatment.—If possible, *remove the cause*; if not, consult indications under the head of *convulsions*.

TORTICOLLIS.

Synonyms.—Spasm of the Sterno-mastoid Muscle, Wry-neck; *Fr.*, *Torticolis*; *Ger.*, *Steifer Hals, Halsstarre*.

Definition.—A tonic contraction of the sterno-cleido-mastoid muscle, producing a twisting of the neck to one side.

Diagnosis.—It is scarcely possible to mistake the affection where there is no tumor or organic lesion to account for the deformity.

Pathology.—Wry-neck is a true neurosis, due in many cases to irritation of the spinal accessory nerve, conjoined with a want of proper antagonization, the latter resulting from fatigue or some similarly acting cause.

Clinical Experience.—*Aconite* and *Cimicifuga* will promptly

cure the large majority of recent cases, especially those depending on cold and exposure. *Belladonna*, *Rhus tox.*, *Nux vom.*, *Dulcamara*, *Bryonia*, *Lachnanthes*, *Cuprum* and *Mercurius* sometimes relieve in the early stages, but when fully developed medicine has very little power over it.

Auxiliary Treatment.—*Galvanization* of the affected muscle and *Faradization* of the opposite one often give speedy relief in recent cases, but neither electricity, nerve-stretching nor any other procedure seems to materially benefit chronic cases.

WRITER'S CRAMP.

Synonyms.—Serivener's Palsy, Anapeiratic Paralysis; *Fr.*, *Crampe des Écrivains*; *Ger.*, *Schreibekrampf*.

Definition.—A loss of power to perform certain muscular movements required in writing, telegraphing, instrument playing, etc., correctly, owing to a spasmotic action of the muscles concerned in the movements, due to their long-continued use in an unnatural and constrained position.

Diagnosis.—The history of the case, aided by the location of the spasm, will in most cases render the diagnosis sufficiently clear.

Pathology.—As in facial paralysis, torticollis and other allied diseases, the paralysis proceeds from the periphery toward the centre, whence we infer that the disease is not central, but peripheral. What the molecular or anatomical changes in the affected parts, or in the nerves supplying them, are, is not known.

Clinical Experience.—But three or four remedies are known to have any marked curative power over this affection, namely, *Gelsemium*, *Argentum*, *Strychnia*, *Arnica* and *Zincum*. Recent cases will generally yield to the first of these remedies, provided the writer will give the affected muscles sufficient time to recover their lost tone, but not without; the other remedies mentioned are less certain.

Auxiliary Treatment.—*Rest*, *galvanism* and *gymnastic exercise* of the affected muscles constitute the most effective treatment in the majority of cases. Rest of the affected muscles,

that is, rest from the particular muscular movements that have caused the trouble, is essential, whatever other treatment may be instituted. Dr. Poore's plan of directing the continuous galvanic current down the muscles of the forearm, at the same time requiring the patient to continuously open and close his fingers, appears to give good results. The gymnastic treatment is similar, so far as the fingers are concerned, but the patient is required to execute three or four times a day a series of vigorous movements of the whole extremity while opening and closing the fingers. In this way the old habits are broken up, and the nutrition of the affected parts at the same time promoted.

SPASM OF THE GLOTTIS.

Synonyms.—Spasm of the Larynx; Spasmodic Croup, Laryngismus Stridulus; *Fr.*, *Spasme de la Glotte*; *Ger.*, *Kehlkopfkrampf*.

Definition.—Spasmodic closure of the glottis, depending on tonic spasm of the adductor muscles of the larynx, producing a sudden arrest of inspiration, and ending in a shrill crowing sound as the inspiratory act is resumed and concluded.

Diagnosis.—The disease may be distinguished from acute laryngitis, with which it is often confounded, by the absence of fever, the greater affection of the breathing, and by the absence of the croupy cough, which is the distinguishing symptom of the inflammatory affection. A foreign body in the larynx closely simulates spasm of the glottis, but the history of the case will prevent any error of diagnosis.

Pathology.—The disease is a pure neurosis, there being no anatomical change in the larynx. Excessive reflex irritability, arising from constitutional weakness or from some affection of the brain or medulla oblongata, is no doubt the chief factor in its production.

Clinical Experience.—The most successful remedies for relieving the spasm are: *Gelsemium*, *Sambucus*, *Belladonna*, *Chlorine*, *Corallium rub.*, *Lobelia*, *Ipecacuanha* and *Kali brom*. More or less benefit has also been derived from *Moschus*, *Cuprum*, *Arsenicum*, *Spongia*, *Iodine*, *Lachesis*, *Aconite*, *Nux vom.*,

Ignatia, *Phosphorus*, *Carbo veg.*, *Plumbum*, *Phytolacca* and *Bromine*.

Therapeutic Indications.—*Gelsemium*.—Long, crowing inspirations, followed by sudden and forcible expirations. This is perhaps the most reliable remedy we have for promptly relieving the spasms.

Sambucus.—Inspirations less labored than expirations; awakes from sleep with symptoms of suffocation; face livid; gasps for breath; alternation of perspiration and dry heat; attacks usually occur between midnight and morning.

Belladonna.—Red face; great arterial excitement; cerebral congestion; paroxysms occur during the day or evening; excited by drinking.

Chlorine.—Crowding inspiration, expiration greatly impeded; cyanotic and partially unconscious; chest inflated by a succession of crowding inspirations to a painful extent.

Iodium.—Attacks provoked by enlarged cervical, bronchial and other glands; rachitic and scrofulous children; clayey stools; circulation feeble and easily disturbed by motion.

Phytolacca.—Frequent spasmody closure of the larynx; contraction of the thumbs and toes; distortion of the face; eyes move independent of each other.

Plumbum.—Spasm of the glottis; asphyxia, with sudden arrest of breathing; mucus rattling in the throat.

Cuprum.—Convulsive breathing, with cough; blueness of the face and lips; cough relieved by swallowing cold water; when produced by fright.

Ipecacuanha.—Blue face and cold extremities at the commencement of the attack; accumulation of mucus in the bronchia.

Kali brom.—Often relieves night attacks, or when excited by the irritation of teething or of worms.

Corallium rub.—Spasmodic closure of the larynx, with painful dyspnœa; face red, cheeks hot and feet cold.

Auxiliary Treatment.—The warm bath, with cold water dashed on the head and face, usually puts an immediate end to the spasm; afterward cold sponging of the chest, with out-of-door exercise, tends to prevent its recurrence. Reflex cases

require the special treatment appropriate to each condition. Thus, if there is phimosis it should be immediately relieved by surgical operation; if the child is teething the gums should be lanced; if the stomach is overloaded an emetic should be given; and if worms are present they should be dislodged, or the virminous irritation allayed, by appropriate treatment.

FACIAL ATROPHY.

Synonyms.—Neurotic Facial Atrophy, Unilateral Facial Atrophy, Progressive Facial Atrophy, Progressive Facial Hemiatrophy; Fr., *Atrophie Partielle de la Face, Aplasie Lamineuse Progressive, Trophonévrose Faciale*; Ger., *Prosopodysmorphia*.

Definition.—An affection in which one side of the face becomes notably smaller than the other, owing to an atrophic condition of the cutaneous, subcutaneous and other tissues of the affected side.

Diagnosis.—Progressive facial atrophy may be readily distinguished from progressive muscular atrophy, by the fact that, when the latter is seated in the face, it is not confined to that part, nor to one side of it, as in facial atrophy. In its early stages it is liable to be mistaken for facial paralysis, but the latter occurs suddenly, while facial atrophy is developed very gradually; moreover, the electro-excitability of the muscles is always diminished in facial paralysis, which is not the case in this disease.

Pathology.—Microscopical examinations of the affected muscles exhibit no degenerative changes of any kind, so that, so far as the muscles are concerned, there is simply atrophy without degeneration—a condition essentially different from what exists in other trophic diseases, such as atrophic spinal paralysis, progressive muscular atrophy, etc. From the fact that the upper and middle cervical ganglia have been found distinctly tender on pressure made over them, Bastion and others attribute the disease to persistent irritation acting upon the cervical sympathetic; Hammond and others refer it to certain hypothetical "trophic nerves;" while Vulpian, who positively affirms that it cannot be due to vaso-motor influences acting

on the parts which are the seat of the disease, regards it as an essential atrophy, due to some intracranial lesion. This opinion is based upon the fact that when the disease results from traumatic violence inflicted on the head or face its development is accompanied, in the great majority of cases, for several years, with pains of greater or less violence seated in the head, ordinarily toward the fronto-temporal region. Sometimes, also, there are spasmodic movements of the muscles of the face or of the jaws; and in some rare cases there has been numbness in the upper extremity of the opposite side. He, however, in common with all other authorities, is embarrassed to designate a seat for the lesion which can reasonably explain all the phenomena of the disease.*

Clinical Experience.—The only case of this disease that I have had an opportunity of treating, though never entirely cured, was seemingly arrested by *Phosphorus*⁶, continued over a period of nearly two years. The young lady finally married, and I lost sight of her.

Therapeutic Treatment.—The remedies most likely to prove beneficial in this disease are the various preparations of *Phosphorus*, *Belladonna*, *Calcarea*, *Argentum nit.*, *Stramonium*, *Gelsemium*, *Baryta*, *Causticum* and *Sulphur*.

Auxiliary Treatment.—Bastion claims that marked amelioration has been produced, in some cases, by the long-continued application of a continuous current of weak tension to the cervical sympathetic ganglia.

PERIPHERAL ANÆSTHESIA.

Synonyms.—*Neural*, *Cutaneous* or *Local Anæsthesia*; *Fr.*, *Anesthésie Cutanée*; *Ger.*, *Anæsthesia*, *Anästhesie*.

Definition.—Loss, more or less complete, of natural, and especially of tactile, sensibility.

Diagnosis.—Cerebral, spinal and cerebro-spinal anæsthesia—that is, anæsthesia of central origin—has already been considered in connection with the several diseases on which it de-

* See the author's *Intracranial Diseases*, p. 153.

pends, while anaesthesia of the special senses does not come within the scope of this work. The chief point, therefore, in our diagnosis is to discriminate between peripheral anaesthesia, properly so called, and anaesthesia due to central causes. In cutaneous anaesthesia the existence of a peripheral cause will be sufficient evidence of the nature of the affection, while, on the other hand, anaesthesia of central origin is almost invariably associated with other marked symptoms of cerebral or spinal disease. In anaesthesia of the trigeminus, or fifth pair of nerves, the elements of the diagnosis are given by Romberg as follows:

“1. The more the anaesthesia is confined to single filaments of the trigeminus, the more peripheral the seat of the cause will be found to be.

“2. If the loss of sensation affects a portion of the facial surface, together with the corresponding facial cavity, the disease may be assumed to involve the sensory fibres of the fifth pair before they separate to be distributed to their respective destinations; in other words, a main division must be affected before or after its passage through the cranium.

“3. When the entire sensory tract of the fifth nerve has lost its power, and there are at the same time derangements of the nutritive functions in the affected parts, the Gasserian ganglion, or the nerve in its immediate vicinity, is the seat of the disease.

“4. If the anaesthesia of the fifth nerve is complicated with disturbed functions of adjoining cerebral nerves, it may be assumed that the cause is seated at the base of the brain.”

Pathology.—The pathology has been, for the most part, sufficiently indicated under the above heading. As cold appears to be the principal cause of peripheral anaesthesia, it is highly probable, as pointed out by Rendu, that in the majority of cases neuritis lies at the bottom of the trouble.

Therapeutic Treatment.—The most important point in the treatment is *the removal of the cause*. Until this is effected medicine can be of no permanent benefit, while afterward it is seldom required. When caused by external injuries, *Arnica* and *Hypericum* are indicated. Exposure to cold calls for *Rhus*

tox., *Dulcamara*, *Causticum*, *Mercurius*, *Colchicum*, *Nux vom.*, etc., in prescribing which the accompanying symptoms and conditions should also be taken into account.

Auxiliary Treatment.—*Friction*, *massage* and *electricity* are among the various means employed to restore the lost sensibility, the last of which is by far the most efficient. As a general rule, the secondary current is to be preferred, and this may be rendered still more effective by employing the *wire brush*, as one of the electrodes, upon the affected part.

PART V.

DISEASES OF THE SYMPATHETIC NERVOUS SYSTEM.

HEMICRANIA.

Synonyms.—Megrim, Nervous Headache, Sick Headache, Cephalalgia Periodica; *Fr.*, *Migraine*; *Ger.*, *Migräne*.

Definition.—A periodical headache, usually confined to one side or one half of the head, and frequently attended with more or less nausea and bilious vomiting.

Diagnosis.—The periodicity of the headache, its unilateral form, and the gastric disturbances associated with it, sufficiently distinguish it from every other affection.

Pathology.—Formerly the disease was regarded as a peculiar form of neuralgia, dependent on gastric or hepatic derangement; but since Du Bois Raymond, who was himself a sufferer from it, made a careful study of the phenomena, it has generally been held to be due to an affection of the cervical portion of the sympathetic nerve, or of its centre in the medulla oblongata, giving rise to spasm of the cranial vessels and disturbances of the sensory nerves of the affected side of the head.

Clinical Experience.—The remedies which have most frequently given relief to sick headache are: *Sepia*, *Stannum*, *Belladonna*, *Sanguinaria*, *Iris vers.*, *Arsenicum*, *Calcarea carb.*, *Gelsemium*, *Pulsatilla*, *Veratrum*, *Spigelia*, *Kali bich.*, *Bryonia*, *Cyclamen*, *Bromine*, *Niccolum sulph.* and *Natrum mur.* The following have benefited particular cases: *Silicea*, *China*, *Nux vom.*, *Ignatia*, *Caffein*, *Coffea*, *Carbolic ac.*, *Aurum mur.*, *Aconite*, *Cimicifuga*, *Phosphorus*, *Calcarea acet.*, *Sticta*, *Zincum valer.*, *Asafætida* and *Sulphur*.

Therapeutic Indications.—*Sepia*.—Boring, outward-pressing headache, or when caused by mental emotion, especially vexation, and attended with nausea, vomiting, shivering, pale

face and flying heat; ameliorated by pressure, darkness and sleep; periodicity is a marked symptom, especially in females, to which this remedy is especially suited.

Stannum.—One-sided headache in the morning, attended with nausea and ill humor; stupefying pain over the eye and in the temple, feeling as if the part would be crushed; pulsative pain in the side of the head, with heat; face pale and sunken; retching and vomiting of bilious matter.

Belladonna.—This remedy is specially indicated in attacks accompanied by congestion of the brain, heat and redness of the face, irritation of the sensory nerves of the eye and dilatation of the pupils; it acts best on the right side, and when the pain is aggravated by light, heat and motion, especially stooping.

Sanguinaria.—Hemicrania, which increases in violence with the sun's ascent, decreases as it declines, and is *preceded by scanty urine*, passing off with a *profuse flow of urine*; also when the attacks occur periodically every week or at longer intervals; or when the attacks are most severe on the right side, and are followed by chills, nausea, vomiting of food or bile, and aggravated by the least movement, relieved only by sleep.

Iris vers.—Attacks commencing with a blur before the eyes; dull, heavy, throbbing pains, with nausea, vomiting and great depression of spirits.

Arsenicum.—Hemicrania associated with bilious colic, bilious vomiting or some affection of the liver; great depression of spirits, thinks he will die; aggravated by cold; ameliorated by warmth; attacks renewed by going into the open air; great prostration; feels chilly and is very restless.

Calcarea carb.—Hemicrania occurring in delicate or scrofulous constitutions, with irritable and obstinate dispositions, and attended with nausea and vomiting; aggravated, and frequently induced, by mental and bodily exertion, by exposure to the sun, or to cold and damp weather.

Gelsemium.—Hemicrania accompanied by double vision or by dimness of sight, or with great sensitiveness to sounds; dull, heavy pains extending to the nape of the neck, with throbbing in the temples, and vertigo on rapid movement.

Pulsatilla.—Semilateral headaches where the pupils are contracted, pulse quick, small and weak, or full and strong, with feeling of weakness, or else great strength; chilliness, followed by sweat, sometimes semilateral, nausea and vomiting, no thirst, alternations of flushing and paleness; worse before midnight; suited to delicate, chlorotic girls and to weakly females suffering from menstrual irregularities; also to hemicrania in the male sex when attended with a feeling of intoxication.

Veratrum alb.—Attacks attended with great anxiety, fear, coldness, small, rapid, intermitting or slow pulse, nausea and sometimes vomiting; occasionally attended by a sensation of both warmth and coldness on the scalp and sensitiveness of the hairs; cold sweats on the forehead, weakness, faintness and profuse micturition; attacks usually nocturnal.

Spigelia.—Periodical attacks, generally confined to the right temple or to the left eye and left temple, pulsating, darting or boring, increasing and declining with the sun, and accompanied with paleness of the face, nausea and vomiting; aggravated by motion, stooping, noise, thinking or mental emotion.

Kali bich.—Hemicrania commencing at the internal angle of the eye, and gradually spreading over the brow and side of the head, usually the left; in many cases there is dimness of vision, with aversion to light and noise; pains are usually of a shooting character, extending from the root of the nose to the external angle of the eye; in other cases the pain is dull, heavy and throbbing, and confined to small spots on the side of the head.

Bryonia.—Deep stitching or throbbing pains in the left side of the head, with pressure from behind forward, accompanied by nausea and vomiting; soreness of the scalp and throbbing over the whole side of the head; aggravation from rising, stooping or sitting down.

Cyclamen.—Violent left-sided headache, with heat and throbbing, glittering before the eyes, dimness of vision, chilliness, with nausea; aggravated by motion, especially stooping; worse in the afternoon and evening.

Bromine.—Hemicrania of the left side of the head, usually of but little use on the right side; throbbing in the forehead and

temple; pains in the eye, eyelid and eyebrow of the affected side.

Niccolum sulph.—Periodical attacks accompanied by a sense of great fulness, heat and stupefaction, setting in on rising and increasing until noon, with vertigo and nausea; distress so great as to make the patient groan in anguish.

Natrum mur.—Hemicrania occurring in scrofulous or scorbutic constitutions; attacks periodical and attended with marked weakness, prostration, thirst, palpitation and nausea; pains increase and decrease with the course of the sun.

Auxiliary Treatment.—Absolute rest, low diet and exclusion from light and noise are efficient means of mitigating the distress. The inhalation of three or four drops of *Amyl. nit.* every fifteen or twenty minutes frequently gives speedy relief. *Morphia*, *Sulfonal*, *Antipyrine* and *Phenacetine*, in sensible doses, are sometimes given as palliatives, especially in obstinate cases. The constant current of electricity has often proved beneficial, but is far from being a specific. Care should be taken not to make the current too strong, for fear of causing amaurosis.

EXOPHTHALMIC GOITRE.

Synonyms.—Exophthalmic Bronchocele, Graves' Disease, Basedow's Disease; *Fr.*, *Maladie de Graves*, *Goître Exophthalmique*; *Ger.*, *Basedow'sche Krankheit*, *Glotzaugenkropf*.

Definition.—A nervous affection, characterized by certain functional disturbances of the circulation, and giving rise to violent palpitations of the heart, bronchocele and exophthalmos.

Diagnosis.—The disease is of such a peculiar character as to render an error in diagnosis impossible.

Pathology.—The true nature of the disease, and the relation which the cardiac affection sustains to the bronchocele and exophthalmos, are involved in much obscurity and doubt. The most rational and generally received theory is that which refers the disease to functional disturbances of the sympathetic nervous system. Not only do the general symptoms point to disturbances of the vaso-motor centres, but the almost number-

less complications of the disease, many of which are of an extremely variable and transient character, appear strongly to confirm this view of its nature.

Clinical Experience.—*Iodium* and its various preparations, *Spongia* and *Bromine*, have effected most of the cures which have been recorded, though *Lycopus*, *Badiaga*, *Cactus*, *Ferrum*, *Calcarea carb.*, *Belladonna*, *Baryta carb.*, *Secale cor.* and *Natrum mur.* have occasionally been attended with success. The same is true of *Amyl nit.*, which is administered by olfaction. One of my cases, after resisting all other remedies, yielded permanently to *Bromine*³⁰.

Therapeutic Indications.—Although the disease is rich in symptoms, they are too variable to be studied outside the *materia medica*. In addition to the remedies above mentioned, compare *Phosphorus*, *China*, *Silicea*, *Digitalis*, *Platina*, *Sepia*, *Cimicifuga*, *Silicea*, *Gelsemium* and *Sulphur*.

Auxiliary Treatment.—*Galvanism*, applied to the sympathetic nerve, has been employed with success in many cases, especially in curing the goitre and exophthalmus, and also in improving the general health; it is also highly useful in regulating the menstrual function, upon the disturbance of which many cases measurably depend. Whatever tends to invigorate the system and improve the general health usually exerts a beneficial influence upon the disease. The patient should therefore abstain from the use of stimulants, take regular but gentle exercise in the open air, make use of a plain, but liberal, nutritious and easily digestible diet, and avoid all emotional or other excitement.

MYXŒDEMA.

Synonyms.—The Mucoid Disease, Ord's Cretinoid Affection, Mucoid Cretinism; *Fr.*, *Myxédème*; *Ger.*, *Myxädem*.

Definition.—A disease in which the tissues of the body are progressively invaded by a mucoid, jelly-like substance, unaccompanied by albuminuria or other sign of kidney disease.

Diagnosis.—The disease is not likely to be confounded with anasarca, which it most resembles, as the œdema does not pit

upon pressure, but, on the contrary, is resilient like India rubber. In scleroderma the surface is hard, there is no permanent reduction of temperature, as there is in myxoedema, and the disease belongs to a much earlier period of life. The clubbing of the fingers, as well as the mental symptoms and the history of the case, will also serve to distinguish it from arsenical or other forms of swelling.

Pathology.—The mucoid deposit is found in almost every part of the body, both at the surface and in all the great nerve-centres. The nervous elements undergo yellow degeneration or are atrophied, the nerve-fibres are more or less wasted, and the small spaces filled with hyaline material. The identity of the pathological process in the nerve-centres and in the other tissues appears to show that they are not related as cause and effect, but form parts of some general disturbance of nutrition.

Clinical Experience.—*Glonoin*, *Arsenicum*, *Jaborandi* and *Calcarea carb.* are the only remedies that have so far appeared to materially benefit these cases.

Auxiliary Treatment.—Dr. Ord says that he has in two cases found benefit from the use of vapor baths. Friction has also seemed to benefit some cases.

ANGINA PECTORIS.

Synonyms.—*Breast-pang*, *Cardiac Neuralgia*, *Neuralgia of the Phrenic Nerve*, *Hyperæsthesia Plexus Cardica*, *Sterno-cardia*, *Sternodynæ*, *Sternalgia*, *Syncope Anginosa*: *Fr.*, *Angine de Poitrine*; *Ger.*, *Brustbräune*.

Definition.—A nervous affection, often complicated with organic disease of the heart, characterized by severe paroxysms of pain and sense of constriction, commencing in the region of the sternum or deep in the chest, and extending over the left side of the thorax and the left arm, more rarely over both sides and arms; the pain is often associated with faintness and anxiety, and with various other senso-motor and vaso-motor disturbances.

Diagnosis.—The diagnosis may be easily made from the characteristic symptoms, as given in the above definition, viz.:

great pain, occurring in paroxysms, in the region of the heart, accompanied by a sense, rather than fear, of sudden death, by the feeling of faintness, constriction and cardiac oppression, by the radiation of the pains, etc.

The differential diagnosis between stenocardia, properly so called, and other forms of angina pectoris is as follows:

Angina Vera.	Angina Spuria.
Most frequent at the age of latero-sclerosis, after forty and fifty years.	At every age, even during childhood.
More frequent in males.	More in women.
Attack provoked by every act necessitating an effort; spontaneous attacks are rare.	Attacks from efforts rare; the most attacks come on spontaneously.
Rarely periodical or nocturnal.	Mostly periodical, even at the same hour, and nocturnal.
The attack isolated from any other symptom.	Neurotic symptoms frequent.
The vaso-motor form rare.	Vaso-motor form frequent.
Anguish, with sensation of compression and as in a vise.	Sensation of distension of the heart, with painful anguish.
Severe substernal pain.	The pain more in cardiac region.
Pain of short duration (2 to 15 minutes), ceasing after the effort.	Pain lasting one or two hours and not ceasing with the effort.
Attitude, silence, absolute immobility necessary to stop the pain.	Incessant agitation, walks about, rest does not stop the pain.
Coronary scleroses (of the arteries) the cause.	Neuralgia of the nerves and of the cardiac plexus.
Arterial medication.	Anti-nervous and anti-neuralgia medication.

Pathology.—We see no reason for changing the views we have elsewhere expressed on this subject. Notwithstanding the fact that organic lesions of the heart are almost always associated with angina pectoris, the symptoms are such as to require it to be placed among the neuroses, and such is now the usual classification. Flint, Anstie, Laennec, Eulenberg, Troussseau and others substantially agree in regarding the disease as essentially a neuralgia, while Romberg, Friedrich, Klapka and others believe it to be a hyperesthesia of the cardiac plexus. The author is of the opinion that the spinal

system of nerves is primarily, and the sympathetic system secondarily, involved in these cases, and that the spasm is a reflex symptom, generally of peripheral, but sometimes of central origin. The sources of peripheral irritation are found in suppressed neuralgias, in the various organic lesions of the heart, and in bronchial, pulmonary and abdominal congestions; the central are chiefly, if not wholly, confined to the various forms of spinal irritation.*

Clinical Experience.—While *Amyl nit.* usually gives the most rapid and certain relief during the paroxysm, the most successful curative agent is *Iodium* and its various compounds, especially *Kali iod.* and *Natrum iod.* *Spongia*, *Cactus*, *Arsenicum*, *Glonoin*, *Spigelia*, *Aconite*, *Cuprum*, *Laurocerasus*, *Veratrum alb.*, *Aurum mur.*, *Agaricus* and *Lachesis* have given relief in special cases, agreeably to the following

Therapeutic Indications.—*Iodium*.—Cramping pressure in the region of the heart; spasmodyc palpitation of the heart; sensation as if the *heart was being squeezed together*; pale face; great oppression of the chest, with inclination to faint; anguish, physical and mental, with anxiety.

Natrum iod..—Organic complications, with frequent attacks of angina; *oppressive anguish in the region of the heart, with fear of sudden death*; aching pain in the region of the heart, with sense of constriction; anxious feeling, as if something dreadful was about to happen; mind and body greatly depressed.

Kali iod..—Violent pain in the middle of the chest, extending to the shoulder; extremely violent stitches deep in the chest; *pain in the chest as if cut to pieces*; irresistible desire to go into the open air; torturing feeling of anguish, with oppression of breathing and loss of voice.

Spongia.—Cramping pain in the heart, with great anguish in the chest; *extreme oppression of breathing, with feeling of suffocation*; sudden pain and pressure within the chest, with anxiety; face pale; nausea; lower part of the body feels numb, upper part sore and bruised.

Amyl nit..—Great cardiac oppression and tumultuous action

* Hart's *Diseases of the Nervous System*, p. 273.

of the heart; *aching pain and constriction around the heart, with precordial anxiety*; visible pulsations of the carotid arteries; very severe pain in the region of the heart, extending to the right arm; *angina pectoris, with great agony*; anxiety as if something might happen, *must have fresh air*.

Natrum nit.—Oppressive anguish in the chest, with dyspnœa; *aching pain in the region of the heart*; cardiac palpitations, with anguish; moderately severe cases of angina pectoris.

Cactus grand.—Continuous palpitation of the heart, both day and night; worse when walking, at night, and when lying on the left side; *sensation as if the heart was grasped by an iron hand, preventing movement*; angina pectoris, with organic complications.

Arsenicum.—Great mental and bodily anguish from severe pains in the region of the heart, extending down the arm; great dyspnœa and prostration; surface and extremities cold; attacks followed by numbness and prostration; periodical attacks, attended by faintness and extreme weakness; worse after midnight and from motion.

Glonoin.—*Syncopal form*, with pale face, disposition to faint, nausea and extreme anguish of mind and body; *crampy pains in the region of the heart, producing a feeling of faintness and sense of impending danger*; attacks followed by extreme and prolonged prostration.

Spigelia.—Palpitation of the heart, with anxious oppression of the chest; painful constriction in the left side of the chest, arresting the breathing and producing an anxious feeling of suffocation; pains increased by leaning forward and by motion.

Aconite.—Constant pressure in the left side of the chest, with dyspnœa, increased by exercise; aching, constrictive pain in the left side of the chest, with *paroxysms of great anguish and fear of death*; heat and flushing of the face; attacks occurring in young, strong, plethoric subjects.

Cuprum.—Sudden attacks, attended by intense dyspnœa, faintness and slight convulsions; surface cold and blue; *old chronic cases*, in feeble subjects, with slow pulse and but little vitality.

Laurocerasus.—Violent attacks, attended by extreme suffering, *suffocative gasping for breath* and loss of speech; surface cold and moist; *recent cases*, without serious organic complications.

Veratrum alb.—Functional cases, attended by excessive anguish, *arresting the breathing*, and producing a feeling of impending suffocation; painful constriction of the chest, with violent palpitations and cutting pains.

Agaricus mus.—Cardiac pain and dyspnœa, increased by walking, *with continued pressure at the pit of the stomach*; great precordial anguish, with paralytic pain in the left arm, neck and nape of the neck; *frequent empty eructations*.

Aurum mur.—Palpitation of the heart *produced by walking in the open air*, and increased by continuing to walk, until the anguish becomes so extreme as to compel the patient to *desist from all exercise in the open air*, though such patients can walk for hours in a close room without inconvenience (Kafka).

Lachesis.—Sternal pressure and dyspnœa extending to the shoulders, and *feeling as if the thorax was held by an iron band*; patient is pale, weak and trembling with anguish; pulse small, irregular and intermitting; surface covered with cold sweat; tendency to faint; aggravated by motion.

Compare, also, *Naja trip.*, *Gelsemium*, *Crotalus*, *Digitalis*, *Lycopodium*, *Cimicifuga*, *Dioscorea*, *Angustura*, *Moschus*, *Tabacum*, *Oxalic ac.*, *Bryonia*, *Juglans*, *Asafœtida*, *Rhus tox.*, *Tarantula*, *Lactuca vir.*, *Arnica*, *Phytolacca* and *Sepia*.

Auxiliary Treatment.—Any very strong, stimulating or revulsive impression made upon or over the heart during the occurrence of a paroxysm will usually put an immediate or speedy stop to it. Hence we find that *electricity*, both the induced and constant currents, as well as the *spraying of ether* or the application of *hot bran poultices* over the heart, will generally give relief. Many a victim of *angina pectoris* now finds instantaneous relief by carrying with him for immediate use a small vial filled with cotton moistened with a few drops of *Amyl nit.*, which he can inhale whenever threatened with a new attack.

GASTRALGIA.

Synonyms.—*Neuralgia of the Stomach*, *Heartburn*, *Gastralgia*, *Cardialgia Nervosa*; *Fr.*, *Gastralgie*; *Ger.*, *Magenschmerz*.

Definition.—A gastric neurosis, characterized by pain,

often severe, in or about the stomach, and, as a rule, unconnected with any other affection of the part.

Diagnosis.—Gastralgia may be distinguished from acute gastritis by the absence of the fever, the persistent vomiting, the sensitiveness to hard pressure, and other symptoms belonging only to the inflammatory affection. Cancer of the stomach may be known by the progressive emaciation and steady character of the pain which accompanies it. In perforating ulcer of the stomach the painfulness and sensitiveness to pressure are confined to a small spot, being limited to the seat of the ulcer. Dyspepsia, and the passage of biliary calculi, may also be distinguished by the symptoms peculiar to each.

Pathology.—Nothing is positively known concerning the pathology of this affection. The symptoms plainly point to functional disturbances in both the spinal and sympathetic systems of nerves, in the production of which malnutrition no doubt constitutes the chief etiological factor. Debility produces nervous excitability, and gives rise to a great variety of functional disturbances, as we see in hysteria, spinal irritation, anaemia, etc.—conditions frequently associated with gastralgia, as they are with each other. It is reasonable to infer, therefore, that they all have a common basis in malnutrition of the nervous centres, though no organic changes sufficient to account for the phenomena are discoverable.

Clinical Experience.—*Nux vom.*, *Ignatia*, *Arsenicum*, *Oxalic ac.*, *Argentum nit.*, *Bryonia*, *Carbo veg.* and *Pulsatilla* stand at the head of the list as curative agents in this disease, though cures have also been effected by *Belladonna*, *Ferrum*, *China*, *Petroleum*, *Stannum*, *Plumbum*, *Bismuthum*, *Colocynth*, *Coccus*, *Lachesis*, *Hydrastis*, *Dioscorea*, *Veratrum*, *Aurum mur.*, *Sulphuric ac.*, *Iris ver.*, *Hydrocyanic ac.*, *Ptelea*, *Cina*, *Rumex*, *Sepia*, *Calcarea carb.*, *Nitric ac.*, *Lobelia*, *Phosphoric ac.* and many other remedies.

Therapeutic Indications.—*Nux vom.*—Clawing, drawing and cramping pains in the stomach, with tension and pressure between the shoulder-blades; the pain extends into the chest, or downward into the abdomen; epigastrium sensitive to the touch; pain worse from light pressure and better from hard pressure; gastralgia brought on by high living, indulgence in tobacco-chewing and smoking, sedentary habits and habitual

constipation; pain worse from eating; pressure in the epigastrium after meals, as from a stone, from indigestion; heartburn. This remedy alone will, if persevered in, cure the majority of cases.

Ignatia.—Cramping pains in the stomach; sharp, pinching, pressive pains in the pit of the stomach and in the right hypochondrium; pressive pain in the epigastrium; a relaxed, flabby feeling in the stomach, or an all-gone feeling, as if from fasting, with great exhaustion; hysterical, changeful moods, now tearful, silent and melancholy, then impatient, irresolute, ill-humored and angry; burning in the stomach; regurgitation of food; frequent voiding of large quantities of pale urine; especially suited to hysterical and nervous persons, especially females and those addicted to the excessive use of tobacco.

Arsenicum.—Acute burning, or gnawing, corroding pains, accompanied by great restlessness, nervous excitability, coldness of the extremities, palpitation of the heart and nightly aggravations; feeling as if the stomach was inflamed; pressure in the stomach as from a lump; vomiting of food as soon as taken; faint, sickly feeling, with pale face and earthy complexion; induced by eating ice cream, cake, etc.; relieved by drinking milk.

Argentum nit.—Severe gastralgia, attended with heartburn, which is aggravated or excited by eating; feeling as if a stone lay in the stomach; gnawing, ulcerative, sore pain, seated at one spot, or radiating to different parts, with spinal irritation; pains sometimes appear to depend upon an irritable state of the nerves of the stomach proper; often there are flatulence, nausea and palpitation; pain increases and decreases gradually; hard pressure in the pit of the stomach sometimes relieves.

Bryonia.—Contractive, pinching pains, relieved by eructations; pressure in the stomach after eating as from a stone; soreness and tenderness in the epigastrium; bloated feeling in the stomach, with stitches and oppression of breathing; symptoms aggravated by motion and by eating; pains come on in chronic cases an hour or two after eating and continue for several hours.

Carbo veg.—Gastralgia, with waterbrash, coming on about 3 P.M., with thirst for cold water; bloating of the stomach,

with burning pains, relieved by eructation; vomiting of large quantities of mucus tinged with bile, giving relief; suited to cases complicated with hysteria or dyspepsia, especially if there is present a hyperaemic and irritable condition of the lining membrane of the stomach.

Pulsatilla.—Heartburn when the stomach is empty; sour and bitter vomiting, with absence of thirst; feeling as if food had lodged in the cesophagus; indigestion provoked or aggravated by eating rich or fat food.

Belladonna.—Cramping or shooting pains in the pit of the stomach, forcing the patient to bend backward and to hold his breath; periodical pains in the pit of the stomach, with tremor; region of the stomach sensitive to the touch; face bloated and congested; pressing, drawing and clutching pains extending to the back, with nausea, thirst and vomiting, aggravated by drinking water or by motion, and ameliorated by eating.

China.—Gastralgia, attended with great chilliness or coldness, constant feeling of weariness and debility, heartburn, with sour eructations, bloated abdomen and palpitation of the heart; gastralgia at a certain hour every day or every other day; gastralgia after natural or artificial depletions; torpid liver, with jaundiced hue, and large, undigested stools, worse at night; pains aggravated or excited by cold, by eating, by fatigue or by mental emotions.

Oxalic ac.—Gastralgia appearing after eating, with pyrosis and cold feeling externally between epigastrium and umbilicus.

Veratrum.—Pain in the epigastrium, coming on gradually, radiating upward to both sides and to the back between the scapulæ, increasing in violence till it becomes agonizing, then gradually wearing off; especially adapted to those cases in which the celiac plexus and sympathetic are involved; pain increases and subsides gradually, and is attended with marked coldness of the extremities.

Cocculus.—Cramping pains in the stomach, preventing sleep; violent pinching, gripping and cramping pains in the epigastric region; great distension of the stomach from an accumulation of gases; especially suited to cases where *Nux vom.* being indicated fails to cure, and pyrosis is not present.

Colocynth.—Pains paroxysmal and extend into the umbilical region, obliging the patient to bend double; exacerbations recur every few minutes, are not the result of indigestion, but rather, in some cases, of emotional excitement.

Ferrum.—Anæmic cases, with atony of the stomach; heartburn, with feeling of a load in the stomach; vomiting immediately after eating, which usually relieves the suffering; aggravated or induced by coughing and moving about.

Bismuthum.—Pressure in the stomach as from a load; burning pain in the stomach, extending to the spine, with water-brash, flatulence and extreme prostration; pains are sometimes relieved by bending backward. This is the principal remedy of old-school physicians.

Stannum.—Heartburn, canine hunger, sinking at the pit of the stomach, great uneasiness; patient finds relief by walking; the pain comes on gradually, extends to the navel, is relieved by pressure and is very obstinate.

Consult, also, the other remedies above mentioned, likewise the therapeutic indications given under the head of *enteralgia*, p. 212.

Auxiliary Treatment.—Electricity, sinapisms and fomentations over the stomach, and similar measures, may be of some value during the paroxysms, but careful attention to diet and the methodical use of the shower-bath, galvanism, etc., during the intervals between the attacks, will, by strengthening the system, be of much greater benefit in most cases, especially in weakly, neurotic, hysterical subjects.

OVARALGIA.

Synonyms.—Pain in the Ovaries, Ovarian Neuralgia, Ovarian Irritation; *Fr.*, *Névralgie des Ovaires*; *Ger.*, *Neuralgie der Ovarien*, *Neuralgie der Eierstöcke*.

Definition.—A nervous affection of the ovaries, characterized by pain of a neuralgic character, occurring in paroxysms and unattended with inflammation or, necessarily, with enlargement.

Diagnosis.—The pain of ovaralgia is characteristic, being

neither burning, as in ovaritis, nor pinching, as in colic, but sets in suddenly, is attended with distinct remissions, and is relieved by pressure; sometimes, also, it shifts to other parts, showing clearly its neuralgic character.

Pathology.—Ovarian hyperæmia, resulting from the monthly ripening and discharge of the ovum, is the only known condition, aside from the neurotic constitution common to neuralgic subjects, capable of producing the disease. Neither of these conditions, however, are necessary factors in its causation, though their combination is a fruitful source of the pain, as testified to by many women who never complain of it at any other period. The rheumatic diathesis also favors it, as it does other forms of neuralgia. These conditions are calculated to render the ovaries sensitive to influences which would otherwise make no painful impression upon them.

Clinical Experience.—*Ignatia* is a reliable remedy in cases occurring in hysterical subjects, especially when the pain is sharp and irritating, with abundant flow of colorless urine, or when the neuralgia is caused by grief; *Conium*, when, with the ovaralgia, there are sharp twinges of pain in the mammae; *Lilium tig.*, when the ovary feels as if squeezed in a vise; *Naja*, obscure ovarian pains; *Ammonium brom.*, when the pain is a dull, heavy, persistent ache, and is aggravated by excitement; *Cimicifuga*, patients of a rheumatic diathesis, or who are subject to menstrual colic and dysmenorrhœa; *Ferrum et Strychnia*, anaemic women, in whom the menstrual flow is scanty and the mucous membranes pale; *Zincum val.*, in cases of pure neurosis, pain shoots down the limb even to the foot, also in chronic cases; *Chininum ars.* or *Chininum sulph.*, when intermittent or of malarial origin; *Gelsemium*, when the pains seem to radiate from the spine, or when there is pain in the back of the head and neck; *Apis*, sharp, cutting pains in the left ovary, or contractive, spasmodic pains in the right ovary; compare, also, *Caulophyllum*, *Hamamelis* and *Colocynth.*

Auxiliary Treatment.—Dr. Julia Holmes Smith recommends the application of hot sand, well saturated with sea-water, over the affected ovary; also its exposure, and that of the surrounding parts, to the direct rays of the sun for an hour every day, affirming that the heat and vivifying power of the

sun's rays make it a valuable curative agent not sufficiently appreciated by the profession. I can fully confirm this testimony, having witnessed several remarkable recoveries by this process while in California, where the sun-bath *is* generally appreciated by all classes.

HYSTERALGIA.

Synonyms.—Neuralgia of the Womb, Uterine Neuralgia, Irritable Uterus, Uterine Colic; *Fr.*, *Fortrainture*; *Ger.*, *Neuralgie der Gebärmutter*.

Definition.—Neuralgic pains in the uterus, sometimes extending through the pelvis, not connected with any demonstrable morbid alterations in that organ.

Diagnosis.—The history of the case, the character of the pain, the absence of inflammation, the periodicity of the attack, the locality of the suffering, and the fact that the pain is usually relieved by pressure, when all are combined in the same case, are sufficient not only to establish its neuralgic character, but to distinguish it from every other painful affection of the part.

Pathology.—What is said under this heading in the previous article applies with equal force to hysteralgia. There is no doubt that some forms of dysmenorrhœa belong to this category. Indeed, most of those uterine pains which occur between and remote from the menstrual periods are usually due to some other disorder of the sexual organs, and are seldom cases of pure primary neuralgia.

Clinical Experience.—*Cimicifuga* is one of our most reliable remedies for uterine neuralgia, especially when it is of rheumatic origin; *Belladonna* has long been a favorite remedy for irritable uterus, especially when the pains are sharp, lancinating and throbbing, and are aggravated by exercise; *Arsenicum* is a valuable remedy if the pains are of a burning character and attended by chilliness, hot, dry skin, thirst, restlessness and anguish; *Calcarea*, if the patient has flying pains about the pelvis, perspires easily and is poorly nourished; *Gelsemium*, if the patient is hypochondrical, fidgety and complains of vertigo; *Sepia*, if the pains occur at the climacteric period; *Caulophyllum* and *Rhus rad.*, if there is any rheumatic

tendency. *Compare, also, Platinum, Xanthoxylum, Ignatia, Pulsatilla, Nux vom., Veratrum, Zincum val., Coffea, Strychnia, Conium, Helonias, Aconite, Sabina, Bryonia, Sulphur and others.*

Auxiliary Treatment.—The constant current, applied with an insulator through the vagina, hot vaginal injections, hot compresses and similar measures often afford considerable relief. Hygienic treatment as in other forms of neuralgia, which see.

ENTERALGIA.

Synonyms.—Neuralgia of the Bowels, Enterodynæ, Neuralgia Mesenterica, Neuralgia Meseraica; *Fr., Névralgie Intestinale; Ger., Neuralgie der Eingeweide, Darmweh.*

Definition.—An affection of the nerves of the intestines, characterized by paroxysms of sharp, intense pain, without inflammation or any discoverable organic lesion.

Diagnosis.—The disease is very apt to be confounded with colic; indeed, many authors regard enteralgia and intestinal colic as essentially one and the same disease. The chief difference between the two affections lies in the fact that enteralgia is a true neuralgia, while colic is dependent on spasm of the muscular walls of the intestines. In the former the pains are darting or lancinating, in the latter twisting or gripping. An error in this particular is, however, of but little consequence, since the treatment is essentially the same in both. Enteritis and other inflammatory affections may be known by the presence of inflammatory symptoms, such as fever, thirst, tenderness on pressure and the stationary character of the pain, none of which symptoms belong to enteralgia.

Pathology.—Impaired vitality of the nerve-centres, whether resulting from hereditary weakness, anæmia, malaria, plumbism, or any form of blood deterioration, lies at the foundation of neuralgia, and enteralgia is no exception to the rule. What the exact relation between them is, other than that of cause and effect, is simply a matter of pure speculation; but, considering the nature of these etiological factors, it is reasonable to infer, as already pointed out, that the disease is dependent on mal-nutrition of the nerve-centres, and this view is confirmed by the apparently central origin of the affection.

Clinical Experience.—Enteralgia resembling colic, or when arising from indigestion, usually yields to *Nux vom.*, *Pulsatilla*, *Dioscorea*, *Colocynth*, *Arsenicum* or *Chamomilla*; lead colic, or enteralgia resembling it, *Alumen*, *Alumina*, *Platina*, *Opium*, *Podophyllum*; abdominal hyperæsthesia, *Plumbum*, *Cuprum*, *Zincum*, *Stannum*.

Therapeutic Indications.—*Nux vom.*—Neuralgia of the bowels *from indigestion or overeating*; attacks resulting *from dissipation or from sedentary habits*; periodical attacks occurring after eating or after regular meals; pains relieved by bending double or by lying on the face; constipation; diurnal drowsiness.

Arsenicum.—Attacks coming on suddenly after eating and drinking, especially after partaking of ice water, cake or ice cream; periodical attacks due to malarial influence; *neuralgic attacks followed by great prostration*, the strength suddenly sinking; burning, cutting pains, attended by great restlessness and intolerable suffering; paroxysms attended by nausea and vomiting, or with thin, watery stools; pains worse at night, also after eating and drinking, better from warm applications.

Colocynth.—Pains appear to *radiate from the umbilicus*, are of a sharp, cutting, darting or twisting character, and occur in paroxysms; relieved by bending double or by hard pressure; coffee and smoking relieve, but food and other kinds of drink usually aggravate.

Dioscorea.—Severe colic-like pains, which do not intermit and are aggravated by rest; relieved by stretching the body out or by walking about; *hyperæsthesia of the abdominal nerves*; pains shift their location suddenly and appear in distant parts, as the fingers and toes; stools bilious and offensive.

Chamomilla.—Colic-like pains in the region of the navel, also lower down on both sides, with pain in the hollow of the back as if broken; abdomen swollen and drumlike; flatus passed in small quantities without relief; relieved by warm applications.

Podophyllum.—*Lead colic*; frequently recurring attacks, accompanied by *retraction of the abdominal walls*; severe straining during stool, with escape of flatus; morning aggravations; attacks renewed by eating and drinking.

Alumina.—*Lead colic; paroxysmal pains, with dyspnoea, worse when stooping; violent cutting pains, principally in the evening, succeeded by oppression of the chest; colic-like pain, followed by diarrhoea and pain in the region of the kidneys; pinching and lacerating pain, with chilliness in the abdomen, relieved by heat.*

Opium.—*Lead colic; violent cutting pains in the abdomen, as if made with a knife; constipation, with hard and distended abdomen; pains worse before and after stool; hypochondria painful when touched.*

Plumbum.—*Excruciating pains in the umbilical region, shooting to other parts, and moderated by pressure; recti muscles hard and knotty; abdomen retracted to the utmost extent; ameliorated by hard pressure and by friction; obstinate constipation; pains resembling lead colic, but due to some other cause.*

Cuprum.—*Violent cutting, drawing, intermittent pains; abdomen retracted and sore to the touch; pains cause the patient to utter fearful screams; very restless and uneasy, constantly tossing about; worse by drinking cold water.*

Platina.—*Lead colic; severe colic-like pains, with sensation of burning and writhing around the abdomen, with oppressed breathing, and with a tremulous sensation through the whole body; drawing pains, extending from the chest to the groins and into the genital organs; patient screams and tosses about in every direction to relieve his suffering.*

Belladonna.—*Violent cutting, clutching, clawing pains in various parts of the abdomen, constantly shifting about, appearing and disappearing suddenly; light pressure aggravates, but hard pressure relieves; thirsty, but drinks little, as drinking aggravates the pains; tendency to cerebral hyperæmia; worse until evening and after midnight.*

Compare, also, Ignatia, Coccus, Mercurius, Aconite, Phosphorus, Rhus tox., Veratrum, Iris vers. and Sepia.

Auxiliary Treatment.—Hot fomentations, warm or hot water enemas, frequently repeated, mustard foot-baths, hot Aconite and Chloroform liniments often give great relief. In lead colic it is sometimes necessary to resort to Morphia, which is best given hypodermically.

PART VI.

SYMPTOMATIC DISEASES.

CEPHALALGIA.

Synonyms.—Headache; *Fr.*, *Cephalalgie*, *Douleur de Tête*, *Mal à Tête*; *Ger.*, *Kopfschmerz*.

Definition.—Pain in the head, usually symptomatic of some other affection.

Diagnosis.—Hemicrania is the only affection liable to be confounded with it. In hemicrania the pain is more or less unilateral, is frequently associated with nausea and bilious vomiting, is generally ushered in by premonitory symptoms, and is usually of a periodical character—peculiarities which do not characterize ordinary headache.

Pathology.—Excluding hemicrania as a separate disease, headaches, though embracing numerous forms or varieties, may be conveniently arranged in three separate classes, namely: (1) *structural headaches*, or those depending upon disease within the cranium; (2) *congestive headaches*, which may be either active or passive; and (3) *toxæmic headaches*, which include not only those of a rheumatic, syphilitic and other dyscracic character, but all those which attend fevers and inflammatory affections, some of which are also partly congestive. This classification is of itself sufficiently descriptive of their nature.

Clinical Experience.—*Congestive* headaches generally yield to *Belladonna*, *Aconite*, *Ammonium carb.*, *China*, *Cactus*, *Glonoin*, *Ferrum*, *Asclepias syr.*, *Pulsatilla*, *Digitalis*, *Cimicifuga*, *Carbo veg.*, *Calcarea carb.*, *Alumina*, *Atropine*, *Amyl nit.*, *Chamomilla*, *Bryonia*, *Camphor*, *Coccus*, *Gratia*, *Fluoricum ac.*, *Causticum*, *Caladium*, *Arnica*, *Agaricus*, *Capsicum* and *Gelsemium*; or else to *Kali carb.*, *Lycopodium*, *Mercurius cor.*, *Lachesis*, *Hamamelis*, *Magnesia carb.*, *Silicea*, *Theridium*, *Sepia*, *Nux vom.*, *Sanguinaria*, *Naja*,

Kali iod., Cuprum, Lachesis, Lilium tig., Natrum sulph., Opium, Stramonium, Veratrum vir., Nitric ac., Phosphoric ac., Psorinum, Spongia, Lachnanthes, Sulphur and Phosphorus.

Remedies and indications for nervous headache.—See *hemicrania*.

Remedies successfully employed in the various forms of symptomatic and sympathetic headaches are given below in connection with the *therapeutic indications*.

Therapeutic Indications.—Chamomilla.—*Pains* stinging, stitching, tearing and pressing; *seat*, forehead, temples and vertex; aggravated by mental exertion; ameliorated by motion; especially suited to children; *arthritic* and *rheumatic headaches*, especially when attended by vertigo, nausea and vomiting.

Berberis.—*Pains* lacerating, darting, tensive or aching; face pale, cheeks sunken, eyes with bluish-black circles; *arthritic*, *menstrual* and *rheumatic headaches*, especially when complicated with hepatic troubles; aggravated by motion, stooping, afternoon; ameliorated in open air.

Ipecacuanha.—*Pains* stinging, throbbing, lacerating; accompanied by nausea, vomiting, drowsiness, heaviness of the head; aggravated by stooping or moving the head; ameliorated out of doors.

Natrum sulph.—*Characterized* by fulness, heat in the vertex, pressure, vertigo, nausea, vomiting; *menses* late and scanty; *mood* sad and depressed; *worse* in the forenoon; *menstrual headache* occurring periodically, every spring.

Lachesis.—*Pains* throbbing, beating, lacerating, pressing; *seat*, forehead, temples, vertex, over the eyes; giddiness just before the menses; nausea and vomiting; pain in *left ovarian region*; ameliorated by lying down; *headaches catarrhal, hysterical, menstrual and rheumatic*.

Sepia.—*Pains* pressing, stinging, stitching, often one-sided, usually the right; nausea and vomiting, with aversion to food; aggravated by noise and motion; ameliorated by rest, darkness and sleep; *gastric, hysterical and rheumatic headaches*, or headaches depending on derangement of the digestive or sexual systems.

Belladonna.—*Pains* sudden in their appearance and disap-

pearance, but last indefinitely; often *accompanied* by stupefaction and vertigo, redness and swelling of the face; aggravated by noise, light, shock or contact; *catarrhal, gastric* and *rheumatic headaches*, especially in lymphatic or scrofulous subjects; *cerebral congestion*.

Anacardium.—*Gastric headache* caused by indigestion; nausea, with retching, soon after drinking cold water; weak digestion, with fulness and distension of the abdomen; *symptoms* disappear after dinner and reappear two hours afterward.

Aconite.—*Pains* piercing, throbbing, stupefying; headache, with fever, especially when produced by exposure to cold, suppressed perspiration or currents of air; *accompanied* by roaring in the ears, chilliness, restlessness, wakefulness; aggravated by noise, light or motion; *catarrhal* and *menstrual headaches*, especially at the commencement.

Causticum.—*Pains* throbbing, tearing, stitching; *seat*, chiefly in vertex, spreading to forehead and temples; *accompanied* by nausea and vertigo; aggravated by stooping, reading, looking up, shaking the head; ameliorated in the open air; *arthritic* and *rheumatic headaches*, especially in the scrofulous.

Nux mosch.—*Pains* pressing, throbbing, tearing; confined to small spots; bloating of stomach and abdomen; *seat*, chiefly in forehead and temples; aggravated by eating, emotional excitement, menstrual congestion, changes in the weather; *hysterical headache*, especially when complicated with *gastric troubles*.

Silicea.—*Pains* pulsating, pressing, tearing, frequently one-sided; *accompanied* by nausea, vomiting, frequent cold sweat about the head, or vibratory sensations in the head; aggravated by noise, light, motion, even the slightest jar; ameliorated by warmth, darkness and sleep; *gastric* and *rheumatic headaches*.

Sulphur.—*Catarrhal* and *gastric headaches*, especially in scrofulous patients; or when *associated* with constipation, morning diarrhoea or haemorrhoids; or when *caused* by abdominal plethora, suppressed eruptions or mental exertion, or when *beginning, increasing* and *ending* with the daily course of the sun; aggravated by motion, stooping, wet and cold weather, heat of the bed or mental exercise; ameliorated by pressure and moderate warmth.

Phytolacca.—*Pains* sharp, shooting, or dull and heavy; *seat*, forehead and temples; *accompanied* by vertigo, dimness of vision, nausea; aggravated by damp weather; *gastric* and *rheumatic headaches*, especially in syphilitic subjects.

Lycopodium.—*Pains* chiefly pressing and lacerating; *seat*, forehead and temples; *characterized* by great restlessness and disposition to faint; *worse* in the afternoon; *gastric, biliary* and *rheumatic headaches*.

Colocynthis.—*Pains* tearing, aching, drawing, compressive, often one-sided; *accompanied* by restlessness, anguish, vertigo, nausea, or vomiting of bitter, yellowish fluid; aggravated by motion, stooping, bending the head forward; ameliorated by pressure; *arthritic* and *rheumatic headaches*, especially those of an *intermitting* type.

Euphrasia.—*Catarrhal headache*; headache *accompanied* by profuse watery coryza, smarting of the eyes, lachrymation, photophobia, or sneezing and discharge of mucus; aggravated by cold in the head.

Iris vers.—*Pains* shooting and throbbing, or dull and heavy; *seat*, chiefly in the forehead; *accompanied* by nausea and vomiting, first of sour, watery fluid, then of bile; *paroxysms of pain*, followed by copious emissions of urine and vomiting, with great burning and distress in the stomach; *biliary* and *gastric headaches*, always *beginning with a blur before the eyes*.

Arsenicum.—*Pains* burning, beating, pressing, drawing or throbbing; sometimes *associated* with a fluent burning and excoriating coryza; often *attended* with a burning nausea and the characteristic thirst; ameliorated by warmth, wrapping up the head or by rubbing; cold water only relieves temporarily; *catarrhal, gastric and malarial headaches*, especially those of an *intermitting* or *periodical* character.

Bovista.—*Menstrual headache*, characterized by deep-seated, stupefying pains; putrid, bitter taste, with nausea and empty eructations; morning sickness, relieved by eating breakfast; aggravated by pressure and by sitting up.

Caulophyllum.—*Pains* contractive or pressive, paroxysmal or *intermitting*; pressure behind the eyes, with dimness of sight; menstrual irregularities, with "moth" spots on the forehead;

aggravated by stooping, light and noise; *menstrual* and *rheumatic headaches*.

Gelsemium.—*Catarrhal* and *hysterical headaches*, appearing suddenly, with vertigo, dimness of sight and double vision; often *accompanied* by slight nausea; ameliorated by shaking the head; pain in the back of the head and neck, extending to the shoulders, also across the forehead and temples; *relieved* by profuse urination.

Mezereum.—*Catarrhal headache* in scrofulous and syphilitic subjects; headache extending from the root of the nose into the forehead, as if everything would press asunder, with pain in the temples when touched; heat and perspiration on the head, with chilliness and coldness of the rest of the body.

Kali carb.—*Catarrhal headache*, especially in aged people inclined to obesity; *pains* are of a sticking character, *worse* when stooping or moving the head, *better* from raising the head and from warmth; constipation.

Nux vom.—*Pains* pressing, drawing, stupefying, affecting the whole or any part of the head, but especially the forehead; *accompanied* by more or less dizziness, nausea and inclination to vomit; aggravated by motion, stooping, moving the eyes, noise, light and mental exertion; *gastric* and *bilious headaches*, attended by constipation, and brought on by a debauch, wine, coffee, sedentary habits, or too close mental application.

Podophyllum.—*Gastric*, *rheumatic* and *bilious headaches*, especially when *associated* with torpidity of the liver; or when *alternating* with diarrhoea, or when *accompanied* by bitter taste and risings, giddiness, glimmering before the eyes; nausea, bilious vomiting and purging; *worse* in the morning; *better* from pressure and from lying quiet in the dark.

Stramonium.—*Hysterical* and *rheumatic headaches*, especially in young and plethoric persons; swollen face, with glistening eyes; vertigo when walking in the dark; heat and pulsations about the vertex, *accompanied* by faintness and loss of sight and hearing; aggravated by cold; ameliorated by warmth and quiet.

Platina.—*Pains* drawing, crampy, affecting chiefly the forehead; face usually red and hot; numb feeling in the brain;

mood variable, sometimes cheerful, at others depressed ; aggravated by stooping and by being in a warm room ; ameliorated by going into the fresh air ; *hysterical headache*, especially in young girls with erotic desires, or who are suffering from amenorrhœa or from profuse menstruation.

Kali iod.—*Pains* tensive, stinging, shooting and tearing ; *seat*, every part of the head, especially the forehead ; *headache* *accompanied* with inflammation of the frontal sinuses, nose, eyes and throat ; *swelling of the cervical glands* ; violent sneezing, with running of acrid water from the nose, excoriating the skin ; *catarrhal headache*, especially in scrofulous and syphilitic subjects.

Gymnocladus.—*Catarrhal headache*, especially during the early stage, *characterized* by fulness, throbbing in the forehead and temples, vertigo, numbness, heat of face and exhaustion ; frequent violent sneezing, originating high up in the nose ; dizziness, with dimness of sight, nausea and eructation.

Chelidonium.—*Pains* heavy, drawing and pressing ; *accompanied* by nausea and bilious vomiting ; aggravated by motion ; ameliorated by rest, pressure and closing the eyes ; *bilious headaches*, affecting especially the right side of the forehead and the right temple.

Eupatorium perf.—*Pains* shooting and throbbing ; *seat*, chiefly in the vertex, temples and occiput ; vomiting of food and bile ; tongue coated white or yellow ; attacks generally occur in the morning between 7 and 9 A.M. ; aggravated by heat ; ameliorated by pressure ; *bilious and malarial headaches*.

Asafœtida.—*Pains* darting, stitching, jerking ; they sometimes disappear by the touch, or are transformed into other pains ; hypochondriacal and hysterical restlessness, with anxiety ; ameliorated by walking in the fresh air ; *hysterical headache* in hypersensitive subjects.

Allium cepa.—*Catarrhal headache*, with coryza ; copious watery discharge from the nose and eyes ; *worse* in the evening ; *better* in the open air.

Bismuthum.—*Gastric headache*, complicated with gastralgia ; pain comes on immediately after eating and is relieved by vomiting ; *pains* chiefly frontal ; aggravated by motion.

. *Hydrastis*.—*Catarrhal headache*, especially in debilitated subjects, or when troubled with mucous discharges; pale face, with worn and weary appearance; *myalgic pains* in the scalp and muscles of the neck; discharge of thick white mucus from the nose; cachectic condition, with loss of appetite and fainting turns; subacute and chronic cases.

Gossypium.—*Menstrual headache*, with drawing and stinging pains extending from the temples to the centre of the forehead; nausea, with inclination to vomit; menses last only about twenty-four hours, and are scanty and painful.

Mercurius.—*Pains* burning, stitching, tearing, pressing; accompanied by catarrhal affections of the head and throat; disposed to sweat easily; *chronic cases*, complicated with ozæna, the pain extending to the root of the nose and frontal sinuses; *catarrhal* and *rheumatic headaches*, especially when occurring in syphilitic subjects.

Phosphorus.—*Pains* burning or throbbing, seated in the forehead or temples, often semilateral; accompanied by nausea, vomiting, vertigo, with a tendency to fainting, especially in the morning on rising; sudden changes of mood, from grave to gay, from laughing to weeping; aggravated by stooping, music, mental and moral disturbances or abuse of stimulants; *hysterical headache*.

Alumina.—*Chronic catarrhal headache*, especially in scrofulous subjects; head feels heavy, with oppression in the forehead; pressive, stupefying pain in the frontal region; aggravated by being in a warm room, or by going up stairs or stepping; ameliorated by pressure.

Bryonia.—*Pains* throbbing, digging, sticking, burning or pressing; *seat*, any portion of the head, but especially the temples; usually *associated* with soreness; aggravated by stooping or by quick motion; *gastric* and *rheumatic headaches*, especially when accompanied by nausea or vomiting, or when arising from indigestion.

Cedron.—*Pains* of a shooting character, *located* chiefly in the frontal region, often extending to the orbits; when severe they are often *accompanied* by palpitation and quickened respiration; *malarial headaches*, coming on with clocklike regularity.

Gamboge.—*Gastric headache*, with compressive and heavy pains in the forehead and temples; *accompanied* with vomiting, purging and fainting; drowsy, heavy feeling in the whole head, with pain in the small of the back; watery diarrhœa, with colic and tenesmus; ameliorated in the open air.

Natrum mur.—*Menstrual headache*, occurring periodically, during the menses, every spring; *characterized* by fulness, heat in the vertex, pressure, vertigo, nausea, vomiting; menses late and scanty; sad and depressed mood; *worse* in forenoon.

Pulsatilla.—*Pains* of almost every variety, and often one-sided; *accompanied* by more or less vertigo, nausea, bad taste in mouth, without thirst; *worse* in bad weather; better from pressure, also in the open air; *gastric, menstrual and rheumatic headaches*, especially when due to menstrual irregularities, mental exertion, fat food, abuse of coffee or spirits, or exposure to damp, cold weather.

Stillingia.—*Catarrhal headache* in syphilitic and scrofulous constitutions; dull, heavy, stupefying *pains* in the frontal region; dizziness, with throbbing in the head; headache *accompanied* with inflamed and watery eyes and general soreness of the muscles; *chronic cases* which have been aggravated by mercurial treatment.

Rumex.—*Pains* generally dull, but sometimes sharp and piercing; aggravated by motion; *catarrhal headache*, with great irritation of the larynx and soreness behind the sternum.

Scutellaria.—*Hysterical headache*, especially when caused by mental emotion; pain worse over the right eye; ameliorated by moving about in the open air; urine scanty before and profuse after the headache.

Lilium tig.—*Menstrual headache*, especially in cases due to menstrual irregularity arising from prolapsus or malposition of the uterus, and causing strangury and ineffectual urging to stool; pains in the forehead and temples, with vertigo and depression of spirits; constant bearing down in the lower part of the abdomen, with severe pressure in the ovaries, rectum and anus, with constant desire for stool; bearing-down pressure in the vagina, as if everything would be pressed out; *worse* from rising up and from standing.

Kali bich.—*Catarrhal and rheumatic headaches*, the former accompanied by ozaena; frontal headache, complicated by a chronic catarrhal condition of the nasal and other mucous surfaces; aggravated by moving, stooping or mental exertion; ameliorated by hard pressure.

Crocus.—*Menstrual headache*, of a pressive, burning and throbbing character, affecting the forehead, temples and top of the head; vertigo, with confusion and webs before the eyes; headache at the climacteric period, most severe at the time corresponding to the monthly periods, lasting two or three days and nights; excitable and variable disposition.

Argentum nit.—*Gastric headache* in nervous persons; usually attended with chilliness and trembling of the body, intense nausea and vomiting; giddy and very restless; *worse* in the open air; *better* from bandaging the head.

Coccus.—*Gastric and menstrual headaches*, with a feeling of emptiness in the head; violent headache which compels the patient to sit up, aggravated by talking, laughing, noise and bright lights.

Sanguinaria.—*Gastric and rheumatic headaches*, most severe on the right side, affecting especially the frontal region and temples; accompanied by nausea and vomiting; attacks usually paroxysmal, with more or less chilliness and burning in the stomach; aggravated by motion, light and noise; ameliorated by quiet, darkness and sleep.

Antimonium crud.—*Gastric headache*, with aversion to food; tongue coated white; aching of the limbs, nausea and vomiting; anorexia, risings and inclination to vomit; symptoms ameliorated in the open air.

Carbo an.—*Menstrual headache*, chiefly in forehead and vertex; pains pressing, throbbing, tearing; accompanied by vertigo, sometimes by nausea; vertigo and nausea on raising the head after stooping; *menses* too early and too long, but not too great, followed by debility and prostration.

Calcarea phos.—*Gastric and rheumatic headaches*, with fulness and pressure in the head, and with vertigo when walking or moving; patient dull, peevish, quarrelsome and forgetful; aggravated by changes in the weather, eating and mental and bodily exertion; ameliorated by cold washing.

VERTIGO.

Synonyms.—Swimming of the Head, Dizziness, Giddiness; *Fr.*, *Vertige*; *Ger.*, *Schwindel*.

Definition.—The consciousness on the part of the patient of disordered equilibration of the body.

Diagnosis.—It is impossible to mistake this condition for any other subjective symptom. It is not always easy, however, to determine whether labyrinthine vertigo is primary or secondary. To do this we have to consider the presence or absence of certain symptoms. Thus, tinnitus and deafness without vertigo indicate disease of the middle ear; the same is true of tinnitus and vertigo without deafness. But in order to clear up the diagnosis in these cases, we should test the condition of the conducting apparatus, ascertain the permeability of the Eustachian tube, and make an otoscopic examination of the membrana tympani, since it is not until this is done that we are prepared to estimate the significance of the syncope, nausea, vomiting and other like indefinite symptoms.

Pathology.—It is not always easy to determine with precision which of the sensory impressions is concerned in this or that particular case of vertigo. Sometimes the impressions are labyrinthine when they appear to be ocular, and *vice versa*. Doubtless in some cases the two forms are combined. This is the more probable from the fact that variations in labyrinthine tension may be caused by differences in the vascular tension of the labyrinthine bloodvessels, and a similar cause may, and often does, operate in the case of visual disturbances. Not only do labyrinthine, visual and tactile disturbances give rise to vertigo, but, as is well known, the latter is often caused by derangement of the stomach and other viscera. This is easily accounted for by the close and important nervous relations which the labyrinth sustains to these organs. For example, the nucleus of the vestibular nerve, which supplies the semi-circular canals, and which is a branch of the auditory nerve, is in close relation to the nucleus or internal origin of the pneumogastric. Finally, those diseases, as well as those medi-

cines, which cause variations in the labyrinthine tension may also give rise to vertigo.*

Clinical Experience.—We should never forget that vertigo is a mere symptom, indicative of some abnormal condition, the removal of which is essential to cure. The remedies which, irrespective of the cause, most frequently relieve are: *Phosphorus*, *Nux vom.*, *Arsenicum*, *China*, *Chininum sulph.* and *Pulsatilla*. The following can usually be relied upon in the several conditions named :

Nervous Vertigo.—*Nux vom.*, *China*, *Chininum sulph.*, *Arsenicum*, *Ferrum*, *Phosphorus*, *Phosphoric ac.*, *Pulsatilla*, *Ignatia*, *Zincum*, *Silicea*.

Gastric Vertigo.—*Nux vom.*, *Bryonia*, *Arsenicum*, *Ipecacuanha*, *Pulsatilla*, *China*, *Carbo veg.*, *Sepia*, *Ignatia*, *Phosphorus*, *Calcarea*, *Tarantula*, *Sulphur* and *Natrum mur.*

Epileptic Vertigo.—*Belladonna*, *Stramonium*, *Hyoscyamus*, *Arsenicum*, *Amyl nit.* and *Glonoin*.

Ocular Vertigo.—*Causticum*, *Gelsemium*, *Argentum nit.*, *Phosphorus*, *Physostigma*, *Nux vom.*, *Rhus tox.*, *Spigelia*, *Paris quad.*, *Senega*, *Euphrasia* and *Cuprum acet.*

Auditory or Labyrinthine Vertigo.—*Natrum sal.*, *China*, *Chininum sulph.*, *Rosa damas.*, *Colchicum*, *Aconite*, *Kalmia*, *Salicylic ac.*, *Conium* and *Cicuta*.

Therapeutic Indications.—*Phosphorus*.—Vertigo accompanied by reeling, nausea, vomiting; vertigo occurring in the morning, with an empty stomach, after eating or sleeping, during or after the menses, or with fainting and trembling; *ocular*, *gastric* or *nervous vertigo*, especially when caused by nervous debility, sexual abuse, *spermatorrhœa* or *hæmorrhoids*; *worse after eating*.

Nux vom..—Vertigo, with tendency to faint, worse during and after meals; vertigo associated with *dyspepsia* and *constipation*; vertigo brought on by mental exertion, sedentary habits, high living or *hæmorrhoids*; vertigo in nervous and hysterical subjects; *ocular*, *nervous* or *gastric vertigo*, or when caused

* From the author's work on *Intracranial Diseases*, pp. 269-271, where this subject is treated somewhat at length.

by paresis of the ocular muscles from the use of stimulants or tobacco; *worse* after dinner.

Silicea.—Vertigo accompanied by nausea, and aggravated by motion or by looking upward; dizzy sensation from the nape of the neck into the head; vertigo during sleep, or when rising from a recumbent position; *nervous* or *ocular vertigo*, especially when brought on by severe physical or mental labor, reading, writing or sewing.

Natrum sal.—Vertigo, with inclination to fall toward the left side; *labyrinthine vertigo*, with tendency to fall to the affected side, while surrounding objects appear to move in the opposite direction; noises in the affected ear, with defective hearing; *worse* on raising the head or sitting up.

Natrum carb.—Vertigo, with great lassitude; weakness of digestion, with nausea in the morning and inclination to vomit; *gastric* and *nervous vertigo*, the latter from the effects of exposure to the sun.

Lachesis.—Frequent momentary vertigo, especially on closing the eyes, sometimes with paleness, nausea and vomiting; vertigo, with headache, cerebral congestion and cold extremities; *epileptic vertigo*, with reeling, falling and loss of consciousness.

Veratrum.—Vertigo, with sensation as if everything in the head was loose; loss of appetite, with burning stomach, distended abdomen, flatulency, vomiting and diarrhoea; *gastric vertigo*, with cold perspiration on the forehead.

Senega.—*Ocular vertigo*, especially when caused by paresis or paralysis of the superior rectus or superior oblique muscle of the eye, or when the vertigo and double vision are relieved by bending the head backward.

Ignatia.—Vertigo followed by nausea and vomiting of slimy, sourish fluid; burning in the stomach; abdominal distension, with flatulency and constipation; restless, changeable disposition; vertigo caused by mental emotion; *gastric, nervous* or *epileptic vertigo*; *worse* from stooping or moving the head.

Cuprum.—Vertigo when looking up, with loss of sight, as if gauze were before the eyes; vertigo, with sensation of turning round, or revolving vertigo; vertigo from cerebral congestion; extreme weakness, especially of the lower extremities; *ocular vertigo* caused by paralysis of the nervus abducentis.

China.—Vertigo from nervous weakness or from general debility; vertigo from anæmia, with pale face, ringing in the ears, nausea, vomiting or fainting; vertigo with an empty stomach; *gastric, nervous* or *auditory vertigo*, especially when caused by debility from loss of animal fluids.

Chininum sulph.—Vertigo occurring periodically, with chills and fever, especially when due to malarious influence; vertigo, with headache, cerebral congestion and deafness; *auditory vertigo*, with hammering and humming in the ears and partial deafness.

Conium.—Vertigo caused by looking steadily at an object, or on rising up or going down stairs, or when lying down or turning over in bed; great debility and inclination to sleep; *ocular* or *auditory vertigo*, with sensation as if turning in a circle.

Arsenicum.—Vertigo, with inclination to fall, especially when closing the eyes; nausea and disposition to vomit in a recumbent position, less when sitting up; burning in the stomach, with vomiting; vertigo coming on periodically, with coldness, followed by fever, loss of appetite and vomiting; *gastric, nervous* or *epileptic vertigo*, with reeling, as if intoxicated.

Bryonia.—*Gastric vertigo*, with nausea and disposition to faint; weakness and distension of the stomach, flatulence and constipation; burning in the stomach, with vomiting; aggravated by rising from a recumbent position and by motion; ameliorated by rest and by lying down.

Apomorphia.—*Labyrinthine* or *gastric vertigo*, attended with tinnitus and slight deafness; nausea, with retching and vomiting, coming on at intervals; sudden vomiting, almost without nausea; syncope, with lessening of blood pressure.

Belladonna.—Vertigo accompanied by luminous vibrations before the eyes, especially when stooping or bending the head; vertigo, with vanishing of sight, and a tendency to fall backward or to the left side; *epileptic vertigo*, caused by rush of blood to the head, with heat and redness of the face, buzzing in the ears, dimness of vision and loss of consciousness; aggravated in a warm room; ameliorated in the open air.

Euphrasia.—*Ocular vertigo* from paralysis of the ocular mus-

cles, especially when caused by taking cold, or when associated with coryza; blurring of the eyes, *relieved* by winking.

Stramonium.—Vertigo followed by stupefaction of all the senses and by complete insensibility; vertigo accompanied by strange fancies; *epileptic vertigo*, especially when walking in the dark, day or night.

Opium.—Vertigo, with stupefaction of the senses, or after fright; vertigo, with apoplectic symptoms; pale or bloated face, with dimness of sight and tendency to faint; ameliorated by rest; *ocular vertigo*, depending on paralysis of the accommodation.

Tarantula.—Vertigo after breakfast, with a bad taste in the mouth; vertigo from fixing the sight on any object; *gastric, nervous* or *epileptic vertigo*, so severe as to cause him to fall, but without losing consciousness; nausea, bloating of the stomach and disposition to vomit.

Sepia.—Vertigo, with flatulency and constipation; worse when drinking, while looking upward, or while looking from a great height, a large assemblage of people or an extended plain; *gastric* or *nervous vertigo*, especially when caused by a dyspeptic condition; *worse* when drinking.

Hyoscyamus.—*Epileptic* or *ocular vertigo*, with reeling, loss of sight, hearing and consciousness; double vision; red, sparkling, staring and distorted eyes.

Kali iod.—*Ocular vertigo*, especially in syphilitic patients; dimness of vision, with twitching of the eyeballs; burning in the eyes, with sensation of a film before the eyes, relieved by winking; glandular swellings on neck.

Cocculus.—Vertigo *aggravated* by noise, motion, smoking, coffee, sitting up in bed and riding in a carriage; *epileptic vertigo*, with nausea, reeling, loss of consciousness and sudden falling to the ground.

Argentum nit.—*Ocular vertigo*, caused by weakness or paralysis of the ciliary muscle; transitory blindness, nausea and confusion of the senses; sensation of expansion when looking high up in the street; trembling weakness when walking with shut eyes, or when walking in streets with high houses, as though they would fall upon him.

Cicuta.—*Auditory vertigo*, associated with aural disease, discharge of blood from the ears, loud sounds when swallowing, and hardness of hearing; *tinnitus aurium*; *worse* in the room than in the open air.

Ipecacuanha.—*Vertigo*, with loss of appetite, empty retching and qualmishness; *gastric vertigo*, with nausea and vomiting; *abdominal distension*, with flatulency, colic and diarrhoea.

Colchicum.—*Vertigo*, with roaring and stoppage of the ears; ameliorated by rest; *auditory vertigo*, with chronic discharge from the ears and hardness of hearing.

Kalmia.—*Vertigo* while stooping or looking downward; *palpitation of the heart*; *auditory vertigo*, with sensation when turning as of something loose in the head.

Natrum mur.—*Vertigo*, with nausea and heartburn after eating; *gastric vertigo*, with reeling and dimness of sight; *sensation of everything turning in a circle* when walking; *nausea* and sudden sinking of strength; *burning and feeling of pressure* in the stomach; *want of appetite and aversion to food*.

Physostigma.—*Ocular vertigo* from partial or complete paralysis of the ciliary muscle; has been applied with benefit as a local application in such cases.

Sulphur.—*Chronic vertigo*, especially if preceded by a suppressed eruption; *gastric vertigo*, especially in the morning after breakfast, with nausea; *dimness of vision*, with inclination to fall to the left.

Phosphoric ac.—*Vertigo*, with great disposition to sweat during the day; *night-sweats*, with vertigo; *vertigo* from onanism, loss of animal fluids, or mental exertion, anxiety or over-work; *nervous vertigo*, especially when caused by cerebral or nervous exhaustion.

Gelsemium.—*Vertigo*, with reeling and staggering even to falling; *heaviness of the head*, with imperfection of sight and dulness of mind; *ocular or nervous vertigo*, the former from paralysis of the ocular muscles; aggravated by smoking.

Causticum.—*Ocular vertigo* caused by paralysis of any of the ocular muscles; *congestion of blood* to the head, with heat; *vertigo* brought on by taking cold; *sudden and frequent loss of sight*, with sensation of a film before the eyes; *inclination on*

stooping to fall backward, and on looking up to fall toward the left side.

Amyl nit.—Vertigo, with sensation as if a vapor spread from her through her head, rendering her powerless; slight nausea, with uncomfortable feeling in the stomach; precordial anxiety; she turned deadly pale, felt very giddy, then became partially unconscious, remaining so for ten minutes; mental confusion and a dreamlike state; *auditory vertigo*, with a bursting sensation in the ears, as if the drums would be forced out with each beat of the heart; great throbbing in the ears and head, with confusion.

Calcarea carb.—Vertigo, with stupefaction of the head; sensation of coldness in the brain; vertigo, with tinnitus and nausea, especially when stooping or rising up suddenly; vertigo caused by cerebral congestion; distension of the stomach and bowels, flatulence and constipation; *gastric* or *epileptic vertigo*.

Aconite.—Vertigo on raising the head, or on rising from a recumbent position; vertigo, with sensation of intoxication, the patient staggering like a drunken man; nausea; great fear of falling; *auditory vertigo*, with reeling; *worse* when bending forward or going down stairs.

Compare, also, Graphites, Iodium, Chamomilla, Bovista, Cy-
clamen, Ruta, Mezereum, Lycopodium, Secale, Platina, San-
guinaria, Thuja, Staphisagria, Tartar em., Mercurius, Hepar,
Coffea, Boracis, Arnica, Spongia, Asterias rub., Agaricus, Sam-
bucus, Theridium, Spigelia, Apis.

Auxiliary Treatment.—The application of the *galvanic current* is usually of great service in all forms of vertigo, either as central galvanization, or by the application of both poles on each side of the sixth and seventh cervical vertebræ, using from ten to fifteen cells, as the case may require.

COMA SOMNOLENTUM.

Synonyms.—Stupor, Sopor, Somnolency, Lethargy, Carus, Somnolentia, Lethargia, Carus Lethargus; *Fr.*, *Stupeur*; *Ger.*, *Stumpfsinn*.

Definition.—A greater or less degree of insensibility, arising from a partial or complete loss of consciousness, due to an abnormal amount and kind of sleep.

Diagnosis.—It is not always easy to distinguish the various degrees of insensibility, or unconsciousness, due to abnormal sleep, from similar conditions resulting from other causes. For example, coma is a state of complete insensibility, but complete insensibility is not always coma, and the same is true of minor degrees of unconsciousness. As a general rule, however, we will find, in addition to the comatose state, certain characteristic symptoms belonging to the primary affection, the presence of which will serve to distinguish the condition from that of simple coma. Thus in syncope there is fainting; in asphyxia, deficient respiration; in narcosis, the peculiar effects of the agent or drug producing it; and in uræmia, convulsive movements, vomiting, etc.

Pathology.—Natural sleep is a physiological, not a pathological condition; but stupor, lethargy, coma, etc., denote different degrees of insensibility somewhat allied to sleep, but in which the loss of consciousness is more profound than in any form of true sleep. The terms stupor, sopor, lethargy, etc., are employed to designate various degrees of insensibility and unconsciousness from that of sleep properly so called, up to that of profound anæsthesia, in which there is complete loss of consciousness and true coma. Not only does stupor vary in degree, but coma also. Thus we have what is known as the comatose state, coma and profound coma, the last of which was designated by the older writers *carus*, the gravest of the graver states of unconsciousness and insensibility. These are all pathological conditions or, rather, symptoms of such conditions, the pathology of which corresponds with that of the primary diseases to which the symptoms belong.

Clinical Experience.—The chief clinical distinctions are as follows:

For stupor manifesting itself in the morning: Nux vom., Natrum, Hepar, Phosphoric ac., Sulphur, Natrum mur.

For somnolency coming on early in the evening: Pulsatilla, Lachesis, Calcarea, Silicea, Phosphoric ac., Nux vom.

For coma somnolentum: Belladonna, Opium, Laurocerasus, Barium carb., Crocus, Ledum, Veratrum.

For profound coma: Opium, Belladonna, Lachesis, Lycopodium.

Therapeutic Indications.—*Bryonia*.—Moanings and startings in sleep, with fever, and sometimes with loud cries; great drowsiness or heavy stupor, with or without delirium.

Pulsatilla.—Deep sleep, with snoring inspirations; characteristic symptoms, cerebral, gastric, intestinal and urinary; valuable in cases complicated with erysipelas.

Veratrum.—Protracted stupor, especially when accompanying the collapse of diarrhoea or cholera; coldness of the whole body.

Stramonium.—Deep sleep, with stertorous respiration and bloody froth at the mouth; epileptic coma.

Belladonna.—One of the most reliable remedies for stupor arising from cerebral congestion; stupor, with snoring, dark red face, dilated pupils; drowsy, yet unable to sleep; delirious sleep; eyes half open, but insensible to light.

Lachesis.—Comatose symptoms, especially when resulting from erysipelas of the head and face; constant sopor, with moaning and tossing about, especially in children.

Rhus tox..—Especially valuable in the coma of typhoid fever and erysipelas; sopor, with snoring, muttering and grasping at flocks.

Opium.—Profound coma, such as occurs in apoplexy, with stertorous breathing, dilated pupils, dark red, bloated face, and feeble, irregular pulse; mouth open, eyes half closed, pupils insensible to light.

Chamomilla.—Soporose condition in children, with feverish restlessness; snoring and starting in the sleep; delirium, with moaning, talking or screaming; comatose condition during dentition, especially when associated with diarrhoea.

Tartar emet.—Coma, with constant yawning and stretching; especially indicated when the symptom is caused by irritation or congestion of the brain; great prostration, with trembling of the limbs; coma of delirium tremens.

Camphora.—Sopor and delirium, with chilliness and coldness of the body; talking and snoring in the sleep; cerebral congestion; face red, but sometimes pale.

Phosphoric ac.—Sopor, especially in the daytime; being roused, he answers correctly, but immediately falls asleep again; typhoid fever, especially when attended by profuse sweating.

Helleborus.—Sopor, especially when resulting from an attack of hydrocephalus, either acute or chronic; fever, with hot head and cold hands and feet; urine suppressed.

Secale cor.—Long-continued stupor, with startings and delirium; cold, viscid sweat; face red or pale; fœtid and colliquative diarrhoea; suppression of urine.

Nux mosch.—Sopor, with or without delirium; valuable in low forms of fever, especially when accompanied by putrid or colliquative diarrhoea; also in children during the diarrhoea of teething.

Lycopodium.—Very drowsy during the day, with yawning; sleep disturbed by loud screams; starting and jerking of the limbs during sleep; great nervous irritation, with peevish mood; fevers.

Compare, also, Ignatia, Arsenicum, Cuprum, Sepia, Arnica, Carbo veg., Ledum, Conium, Capsicum, Alumina, Cocolcynth, Crocus, Sambucus, Antimonium, Cannabis, Hydrocyanic ac., Lactuca and Asafoetida.

INSOMNIA.

Synonyms.—Sleeplessness, Wakefulness, Pervigilium; *Fr.*, *Insomnie*; *Ger.*, *Schlaflosigkeit*.

Definition.—An unnatural deficiency or loss of sleep.

Diagnosis.—Healthy sleep varies within certain limits in different individuals; and this variation is occasionally so great, that what would be a normal amount of sleep in one would constitute an excess or a deficiency of sleep in another. The diagnosis therefore must be based on the average or normal habit of the patient himself, and not on that of others.

Pathology.—As in other symptomatic affections, insomnia is a mere symptom of some other abnormal condition or disease. It may be partial, as when the patient is able to obtain only a portion of his usual allowance of sleep; or it may be

complete, in which case he may be unable to obtain any sleep whatever for several successive nights, as in acute mania, violent fevers, or when suffering from severe pain, profound grief or great mental disturbance. In these cases the primary disease is the one to be chiefly considered.

Clinical Experience.—In the absence of other indications, the following clinical distinctions will be of service:

Sleeplessness before midnight.—*Passiflora* *incar.*, *Gelsemium*, *Belladonna*, *Mercurius*, *Phosphorus*, *China*, *Ignatia*, *Pulsatilla*, *Spigelia*, *Graphites*, *Valerian*, *Conium*, *Carbo* *veg.*, *Calcarea carb.*, *Sulphur*, *Bryonia*, *Cyclamen*, *Selenium*, *Moschus*, *Staphisagria*, *Aconite*, *Opium*.

Sleeplessness after midnight.—*Passiflora*, *Rhododendron*, *Asafoetida*, *Platina*, *Rhus tox.*, *Mercurius*, *Arsenicum*, *Coffea*, *Hepar*, *Nux vom.*, *Kali carb.*, *Aurum*, *Nitric ac.*, *Thuja*, *Hyoscyamus*, *Sambucus*, *Capsicum*.

Waking frequently.—*Passiflora*, *Gelsemium*, *Belladonna*, *China*, *Fluoric ac.*, *Teucrium*, *Manganese*, *Digitalis*, *Bismuth*, *Causticum*, *Calcarea carb.*, *Nux vom.*, *Pulsatilla*, *Phosphorus*, *Zincum*, *Arnica*, *Rhus tox.*, *Nitric ac.*

Waking too early.—*Ranunculus* *bulb.*, *Muriatic ac.*, *Dulcamara*, *Sepia*, *Asafoetida*, *Phosphoric ac.*, *Silicea*, *Natrum carb.*

Retarded sleep.—*Passiflora*, *Gelsemium*, *Belladonna*, *Pulsatilla*, *Nux vom.*, *China*, *Ignatia*, *Sepia*, *Causticum*, *Graphites*, *Phosphorus*, *Selenium*, *Lachesis*, *Carbo* *veg.*, *Caladium*, *Mercurius*, *Rhus tox.*, *Sulphur*, *Creosotum*, *Aconite*, *Moschus*, *Opium*, *Veratrum vir.*

Therapeutic Indications.—*Passiflora* *incar.*—Sleeplessness, with great restlessness; suicidal mania; neuralgia, preventing sleep. This is one of the most reliable remedies for insomnia, the patient falling into a quiet slumber, from which he usually awakes in a natural and rational condition.

Gelsemium.—Drowsy and sleepless, or else wide awake and unable to get to sleep; insomnia from cerebral irritation and congestion; insomnia from overwork or debauch; insomnia of college professors, authors or business men.

Belladonna.—Insomnia, with drowsiness; cerebral congestion. One of the most reliable remedies for insomnia when properly

given, the higher potencies being required in all cases where the brain is oversupplied with blood or actively congested, and the lower ones when it is overpowered by the intensity of blood pressure, pupils widely dilated and convulsions threatened.

Aconite.—Sleeplessness from febrile and inflammatory conditions; anxiety, with great restlessness and tossing about; sleeplessness of infants and aged people; sleeplessness due to mental excitement, especially when there is active cerebral congestion, with intense anxiety and fear of death or disaster.

Cimicifuga.—Sleeplessness associated with pain in the base of the brain, extending to the nape of the neck, and sometimes over the shoulders; extreme prostration, both physical and mental. An invaluable remedy in the insomnia of drunkards, especially when it takes the form of delirium tremens, and also in that of opium-eaters, or those who are trying to abandon the use of it.

Nux vom.—Sleeplessness from overwork, both mental and bodily; too close study, especially at night; abuse of stimulants; especially useful in cases of recent debauchery and gluttony.

Phosphorus.—Gets to sleep too late or not at all; insomnia from nervous debility, especially when caused by onanism or sexual excesses; sleeplessness following intense mental strain, overwork or anxiety, or when associated with pain and confusion in the head; wakens frequently during the night, and can get no sound and refreshing sleep.

Opium.—Great wakefulness or drowsiness, with inability to get to sleep; insomnia, with acuteness of hearing, the ticking and striking of the clock, cock-crowing and other noises keeping the patient awake. This remedy, used somewhat high, also mitigates the stupor of cerebral congestion, especially where there is a tendency to apoplexy; particularly suited to the sleeplessness of old people.

Veratrum vir.—Sleeplessness from cerebral congestion, or from a general febrile condition; particularly useful in the insomnia of acute fevers, puerperal mania and the excitement attending attacks of epilepsy.

Hyoscyamus.—Sleepless from nervous excitement; wild, staring eyes; tendency to delirium; especially suited to nervous and overworked persons, particularly women suffering from undue lactation, household cares, etc.

Ignatia.—Sleepless from grief or depressing emotions; insomnia caused by nervous exhaustion, loss of health, property or friends.

Pulsatilla.—Sleeplessness arising from late suppers or from indigestion; determination of blood to the head and surface of the body, rendering the patient restless, sleepless and very uncomfortable; particularly suited to insomnia occurring in mild and tearful young women, especially if there happens to be any derangement of the menstrual function.

Coccus.—Sleeplessness arising from mental activity or from night-watching; sleep retarded, and frequently interrupted by wakings and startings.

Zincum val.—Insomnia, with pains in the head, particularly in children; frequent waking in the night; drowsy, with pale and tired expression of countenance.

Coffea.—Sleeplessness of infants; sleeplessness arising from joy, long watching and overexcitement of mind; acute nervous erethism, preventing sleep.

Moschus.—Nervous excitement preventing sleep; is awakened by sense of heat, rendering the covering uncomfortable; relieved by throwing off the covering.

Stramonium.—Sleepless from intense nervous excitement; sleep interrupted by frightful screams; restless sleep full of dreams; tendency to delirium; best suited to cases attended with unusual mental disturbances, or where there is a tendency to maniacal excitement.

Silicea.—Sleeplessness arising from extreme physical and mental prostration; great depression of spirits; sleeplessness from inanition.

Coca.—Sleeplessness from mental exhaustion or from anaemia; patient sometimes awakened after going to sleep by a sense of shock in the brain; suited to weak and nervous women, worn-out brain-workers, night-watchers and those who have lost much sleep.

Sulphur.—Sleepless from nervous excitement, cutaneous irritation and external heat; sleepy in daytime, sleepless at night.

Arsenicum.—Insomnia from nervous exhaustion caused by general anaemia; will seldom benefit cases not due to blood degeneration, and hence must be given with a view of overcoming this condition.

Auxiliary Treatment.—The three principal causes of sleeplessness are, imperfect circulation, indigestion and anaemia. Much may be done in the way of accessory treatment to remedy these difficulties, and thus secure sound sleep. Thus imperfect circulation, whether it take the form of cerebral hyperæmia, cold feet, or both combined, as is usually the case, may be corrected by a *warm bath* or by a *brisk rubbing* just previous to retiring for the night. Sometimes a *cold douche* just after the bath will be still more effective. *Massage* and *gymnastic exercises* are also useful for the same purpose, though as a general rule the latter had best be practiced in the morning, unless the patient leads a sedentary life, in which case the evening practice is the most suitable.

The effects of indigestion in preventing sleep may usually be remedied by partaking of very early and very light suppers, but this is a matter in which every individual is a law unto himself; experience alone can determine what form, character and amount of food will best agree with any one patient, and the same is true as to the time of eating.

Sleeplessness arising from general anaemia may be successfully combated by the administration of liquid food, such as hot milk, beef-tea and broths, an hour or so before bedtime. In these cases, also, the patient should sleep with his head low, whereas in cases of hyperæmia the head should be well elevated.

As for the bed, the bed-clothing, etc., the aim should be to secure perfect comfort to the patient. No part of the body should be chilled, nor should any portion of it be overheated. Plenty of fresh air should be supplied to the sleeping room, while at the same time the sleeper should be protected from draughts, even moderate ones, as they always have a tendency to disturb the circulation, which is inimical to sound sleep.

PART VII.

MENTAL DISEASES.

MELANCHOLIA.

Synonyms.—Melancholy; *Fr.*, *Lypémanie*, *Mélancolie*; *Ger.*, *Schwertmuth*, *Melancholie*.

Definition.—A form of mental alienation, characterized by excessive gloom, despondency and apprehension.

Diagnosis.—Although formerly regarded as a species of monomania, or partial insanity, it may be distinguished from it by the fact that there is in simple melancholy little or no disorder of the intellect, the emotion is disproportioned to the cause, and hence there is often associated with it a suicidal tendency. But melancholy with delusions, constituting hypochondriasis, is most frequently met with, and is the form we are usually called upon to treat (*see hypochondriasis*).

Pathology.—The physical state with which nearly all cases of melancholia are associated is one of anaemia, but just what relation the anaemia sustains to the mental condition is not fully determined. We know that powerful moral emotions, associated with great mental depression, will, if long continued, derange the bodily functions and lead to inanition and exhaustion. On the other hand, when, as in these cases, there is a strong predisposition to the disease, there is no doubt that defective blood nutrition affords a sufficient explanation of simple melancholy, which is a state of mere depression.

Clinical Experience.—The remedies of greatest repute in melancholia are: *Aurum*, *Ignatia*, *Arsenicum*, *Kali phos.*, *Lycopodium*, *Pulsatilla*, *Nux vom.*, *Belladonna*, *Natrum mur.*, *Cimicifuga*, *Phosphorus*, *Platina*, *Ambra*, *Plumbum*, *Iodium*, *Kali brom.*, *Agnus cast.*, *Amyl nit.* and *Veratrum*.

Therapeutic Indications.—*Aurum*.—Extreme melancholy, fearful, taciturn, mistrustful; *suicidal tendency*, has a great loathing of life; anæmia, vertigo, vascular and nervous depression; *hypochondriasis*; *religious melancholy*.

Ignatia.—*Silent grief*; desires solitude that he may nourish his sorrow; aversion to every form of amusement; anxiety, with taciturnity; sexual impotency; *hypochondriasis*.

Arsenicum.—Very despondent; does not wish to recover, as she thinks she is in the way, and her family would be better off without her; poor appetite; says she is getting weak and cannot control her mind; *tongue red*; has an intense desire for *small quantities of water at short intervals*; persistent burning pains in the stomach and bowels; *hypochondriasis*.

Kali phos.—Melancholic, depressed mood, with excitement and sleeplessness; no appetite; *weeps a great deal from religious melancholy*; constant lamentations, self-reproaches and crying; staring, unconscious look; irritable, fretful, timid, distrustful, weeping mood, with disgust of life and fear of death; *hypochondriasis*.

Lycopodium.—Weeps the whole day; cannot calm herself; worse from 4 till 8 o'clock P.M.; *full of ungrounded fears*; pusillanimous.

Pulsatilla.—*Religious melancholy*; greatly concerned about his worldly and eternal well-being; *weeps, prays and laments*; early in the morning, depression of spirits and full of cares about domestic affairs; pale face, cold hands, flushes of heat; precordial anguish, with thoughts of suicide.

Nux vom.—Taciturn and fond of solitude; easily vexed and disposed to quarrel with every one; *afraid of coming to want*; has a kind of fainting feeling, with nausea and flushes of heat, going off when lying down; pale, sunken countenance; lack of appetite, slow pulse and constipation; involuntary sighing and moaning; *hypochondriasis*.

Belladonna.—*Cerebral congestion*; restlessness which drives him from place to place, and will not allow him to sit or lie down for more than a few minutes at a time; full of mistrust and apprehension; *starts easily*; extremely low-spirited, with disposition to take his own life; great irritability, with mental anguish.

Natrum mur.—Excessive despondency; full of gloomy thoughts; will not listen to consolation; *likes to dwell on past unpleasant occurrences*; sallow complexion; loses flesh, though living well; *hypochondriasis*.

Cimicifuga.—*Puerperal melancholy*; imagines the whole world is against her and that she will become insane; cries, sobs, feels perfectly helpless, and believes her case is beyond medical skill; *puerperal hypochondriasis*; bowels costive, tongue furred, spine sensitive to pressure.

Phosphorus.—*Extreme melancholy*; gloomy, taciturn, anxious, discontented and irresolute; *loathing of life, but anxious for the future*; cold feet and hands, with trembling of the limbs; frequent empty eructations; constipation; impotence.

Platina.—*Melancholy*, with dread of death; weeping mood; anorexia; anxiety, with trembling; disorder of the sexual system.

Ambra gris.—Extreme depression of spirits; sits day after day weeping, with great muscular debility and pain in small of the back; *feels worse from the presence of other people*; sleepless and constipated.

Plumbum.—*Religious melancholy*; great weakness of the sexual organs; extreme constipation; *frequent attacks of colic*; restless, hopeless and indifferent to everything.

Iodium.—*Melancholy* and discouraged; has no ambition; wishes to be left alone; shuns every one, especially the physician; is very apprehensive, restless and thinks that he will become insane.

Kali brom.—Mental depression from cerebral exhaustion; suicidal tendency; *religious melancholy*, with sense of moral unworthiness; nervous system all unstrung; sheds tears and gives way to her feelings in a childish manner; indifferent to life.

Agnus cast.—Extremely low-spirited, with sense of approaching death; vertigo, with loss of memory; starts in sleep, as if from fright; great physical debility, with prostration of mind and body; *puerperal melancholy*.

Amyl nit.—Coldness and chilliness, followed by fever; great depression of spirits, with heat of head and burning of the

hands and feet'; features contracted, face pale, eyes lustreless, and mind dull and obtuse. This remedy is best administered by inhalation, two or three drops, on cotton, three or four times a day.

Veratrum.—Great anxiety, despondency and despair; *religious melancholy*; distrusts every one; cold sweat all over; moaning during sleep; frightful dreams; fearfulness, with tendency to start at every new sight or person; frequent eructations; *puerperal melancholia*.

Compare, also, *Helleborus*, *Cannabis ind.*, *Abrotanum*, *Colocynth*, *Lachesis*, *Indigo*, *Stramonium*, *Bromine*, *Lithium*, *Kali iod.*, *Lobelia*, *Sulphur*, *Leptandra*, *Hepar*, *Causticum*, *Calcarea*, *Alumina* and *Hyoscyamus*.

Auxiliary Treatment.—This may be summarized as follows: (1) Rest as a means of mental and physical recuperation; (2) exercise, amusement and occupation as stimulants in the renewal of health; (3) nourishing diet and, where necessary, artificial feeding; (4) sanitary hygiene, including the warm bath, massage, etc.; and (5) mental and moral hygiene, especially such as is calculated to divert the mind of the patient from his own troubles, furnish an adequate motive for his exertions and, at the same time, produce little or no fatigue; in short, the chief aim should be to impart vigor of body and cheerfulness of spirit to the patient, not only in the ways above mentioned, but, if necessary, by change of scene, travel, cheerful society, and such other measures as the exigencies of the case may require.

HYPPOCHONDRIASIS.

Synonyms.—*Hypo*, *Spleen*, *Morbus Hypochondriacus*; *Fr.*, *Hypochondrie*; *Ger.*, *Milzkrankheit*, *Milzsucht*.

Definition.—A form of melancholia, characterized by hallucinations relative to the state of the patient's physical health.

Diagnosis.—The diagnosis between hypochondriasis and simple melancholy is usually evident enough, since the peculiar hallucination which characterizes the former is always absent in the latter. Moreover, in the former there is no ten-

dency to suicide. On the contrary, the chief concern of the patient has regard to the prolongation of his life, and this impels him to endless search for the cure of his ailments, whether real or imaginary.

Pathology.—As there are no anatomical characters peculiar to the disease, the pathology does not essentially differ from that of *simple melancholia*, which see.

Treatment.—See previous section, as the clinical experience, therapeutic indications and accessory treatment given under the head of *melancholia* apply equally to hypochondriasis, which is but a special form of melancholy.

MORAL INSANITY.

Synonyms.—Emotional Insanity, Impulsive or Affective Insanity; *Fr.*, *Manie sans Délire, Folie Raisonnante, Monomanie Affective*; *Ger.*, *Gemüthschwahnsinn*.

Definition.—A species of insanity in which the intellect is apparently unimpaired, but the moral and emotional part of the brain is disordered.

Diagnosis.—Moral insanity differs from every other form of the disease in the absence of delusion. Notwithstanding this, the morally insane can scarcely be considered of sound intellect, as their conduct is not only odd, peculiar and unlike that of other people, but is often foolish and very unwise, the patient, for example, spending his capital as if it were income, or approving acts which admit of no justification.

Another diagnostic point is, that they seldom, if ever, are insane on more than one point. If, for example, they are possessed of a suicidal tendency, they have no desire to kill others; if they have a propensity to steal, they have no disposition to commit acts of violence; in other words, they are true *monomaniacs*.

Pathology.—Whether caused by hereditary transmission, as is usually the case, or by physical disease, there is in both instances some abnormal condition of the moral portion of the nervous centre. Pathology shows that, as the intellectual functions are not materially disturbed, the disease must be

seated in the cells of the cortical portion of either the lateral and posterior portions of the cerebrum, or in those of the cortical portion of the cerebellum and medulla oblongata. The former is probably the true seat of the malady, as disease or irritation occurring in the cerebellum and medulla oblongata produces a want of controlling power over the muscles, and not over the mind.

Clinical Experience.—The homeopathic *materia medica* is exceedingly rich in emotional remedies, but we shall merely indicate here a few of those which experience has shown can generally be relied upon to meet the special symptoms that characterize the most common forms of emotional insanity.

For *angry mood*: *Nux vom.*, *Ignatia*, *Bryonia*, *Arsenicum*, *Veratrum*, *Staphisagria*.

For *quarrelsome disposition*: *Calcarea*, *Aconite*, *Chamomilla*, *Ignatia*, *Lycopodium*, *Coffea*, *Aurum*, *Nux vom.*, *Alumina*.

For *malice*: *Belladonna*, *Lycopodium*, *Stramonium*, *Veratrum*, *Hyoscyamus*, *Nux vom.*

For *jealousy*: *Hyoscyamus*, *Lachesis*, *Pulsatilla*, *Causticum*, *Cicuta*, *Baryta*.

For *audacity*: *Ignatia*, *Aconite*, *Opium*, *Pulsatilla*, *Berberis*.

For *vindictiveness*: *Aurum*, *Agaricus*, *Lachesis*, *Anacardium*.

For *artfulness*: *Nux vom.*, *Lachesis*, *Chlorum*, *Drosera*, *Coca*.

For *obstinacy*: *Belladonna*, *Sulphur*, *Ignatia*, *Silicea*, *Lycopodium*, *Calcarea*, *Nitric ac.*

For *greediness*: *Bryonia*, *Sepia*, *Arsenicum*, *Pulsatilla*, *Lycopodium*, *Calcarea*, *Natrum carb.*

For *fitful mood*: *Ignatia*, *Platina*, *Sulphuric ac.*, *Aconite*, *Belladonna*, *Graphites*, *Zincum*.

For *suicidal disposition*: *Aurum*, *Arsenicum*, *Belladonna*, *Antimonium crud.*, *Pulsatilla*, *Nux vom.*, *Derris pin.*

For *disposition to kill*: *Stramonium*, *Arsenicum*, *Hepar*, *China*, *Lachesis*.

For *disposition to commit acts of violence*: *Belladonna*, *Stramonium*, *Hyoscyamus*, *Veratrum*, *Coccus*, *Platina*, *Cuprum*, *Lycopodium*.

Therapeutic Indications.—See *melancholia* and *mania* for both indications and auxiliary treatment.

MANIA.

Synonyms.—Madness, Insanity, Furor Mania; *Fr.*, *Fureur, Manie Aiguë*; *Ger.*, *Tobsucht, Wuth, Tollheit*.

Definition.—Disorder of the intellect, characterized by hallucinations or delusions which impel to acts of violence.

Diagnosis.—The violence which characterizes acute mania is such as to prevent any error of diagnosis in cases of that character; but there are many varieties of simple mania, arising from numerous causes, in which the excitement is not very great, nor the delusions, if any, very manifest, especially in the early stages; but they are all attended by more or less excitement, there is no gloom or depression, the conduct is more or less noisy and irrational, and, sooner or later, delusions, coinciding with the temper and bodily condition, manifest themselves. Moreover, the will-power is usually more or less impaired, perception, reason and volition are all to a greater or less extent defective, and if any motive actuates the patient, there is such a want of correspondence between it and the act that there cannot be said to be any adequate motive for it.

Pathology.—The physical changes in the brain which characterize insanity are best seen in chronic cases, where we find degeneration of the cerebral nerve-cells, producing condensation and atrophy of the gray substance, increased weight, diminished volume and chronic inflammation, with softening. Now, although such changes are not observed to any such extent in acute cases, it cannot be doubted that material alterations do exist in all cases of insanity, whether acute or chronic. Even with our inadequate means of demonstration, Balfour, who analyzed seven hundred post-mortems, found tissue alterations in ninety-one per cent. of his cases. Hence the consensus of opinion among alienists now is, that insanity is an actual morbid condition of the brain itself, and not a mere functional disturbance, as was once thought. Indeed, so evident is this truth, that the eminent physiologist, Van der Kolk, asserts that he never failed to discover pathological changes where there was abnormal mental function manifested; as, for

example, where mania existed he found the cortical layer under the frontal bones darkened, more closely adherent to the pia mater, or softened.

Clinical Experience.—*Acute or Furious Mania*.—Stramonium, Opium, Tarantula, Hyoscyamus, Belladonna, Gelsemium, Cuprum.

Suicidal Mania.—Aurum, Nux vom., Pulsatilla, Rhus tox., Belladonna, Sepia, Platina, Zincum, Carbo veg., Alumina, Mercurius, Staphisagria, China, Sulphur, Nitric ac., Arsenicum.

Religious Mania.—Stramonium, Baryta, Aurum, Crocus, Lachesis, Veratrum.

Mania, with Fear.—Aconite, Opium, Veratrum.

Mania, with Aversion.—Conium, Aurum, Calcarea carb., Cicutae, Ammonium mur.

Gay Mania.—Stramonium, Hyoscyamus, Belladonna, Aurum, Platina, Crocus, Lycopodium, Veratrum, Anacardium.

Apathetic Mania.—Argentum, Antimonium crud., Coca.

Antagonistic States of Mind.—Phosphorus, Anacardium, Staphisagria, Sepia, Capsicum.

Puerperal Mania.—Platina, Cimicifuga, Belladonna, Pulsatilla, Ignatia, Aurum, Hyoscyamus.

Therapeutic Indications—Stramonium.—*Acute mania*, characterized by furious rage; *gay mania*, dances, gesticulates, laughs and sings, has paroxysms of constant talking, or breaks out into low laughter, or is in ecstasy, filled with pleasant fancies, expresses his wishes by signs, exceedingly busy with his fancy and quite cheerful; *religious mania*, kneels down, stretches his hands out with pious look, starts up from the least opposition, with wild cries and violent gestures; *puerperal mania* and *nymphomania*, with *obscene gestures and language*; desires light and company, being afraid to go alone; very loquacious, in a prayerful, beseeching, imploring language; face often red and bloated.

Opium.—*Furious mania*, with rage, fear, distortion of face, protruding and conjested eyes, bluish redness and swelling of the lips; paroxysms of rage, with rolling on the floor and threats against his own relatives, whom he does not seem to recognize.

Hyoscyamus.—*Acute and subacute mania*, with or without delusions, where the patients are destructive, tearing up and breaking everything, and *filthy in their habits*; talks incessantly and does not sleep; noisy, shouting and walking about incessantly; *wants to go naked*, will wear no clothes, tears them into tatters; *hallucinations*, but *little or no cerebral congestion*; *gay mania*, dances, laughs in an absent manner, makes ridiculous gesticulations like a clown, and performs funny tricks like a monkey; *religious mania*, alternately ludicrous, solemn or furious, dresses in some fantastic way, as in a priest's gown over his shirt with fur boots, wants to go to church in this guise in order to preach or officiate at mass, and ferociously attacks all who try to oppose him; *puerperal mania*, thinks she has killed her child, and that her chin has become a duck's bill; sleepless, unwilling to remain in bed, delirious, but not violent, or else furious, with indescribable rage and horrid anguish; does not know her own relatives; complains of having been poisoned; complete loss of modesty, throws off the bed-clothes; *hyperæsthesia* of cutaneous nerves; melancholy, with muttering, starting and twitching.

Belladonna.—*Acute, subacute and chronic mania*, with congestion of the brain, headache, flushed face, hallucinations, intolerance of light and noise, desire to suicide by drowning; *chronic*, with occasional exhibitions of silly laughing during agreeable intervals; unsteadiness of purpose, with almost *constant tendency to move some part of the body*, especially the hands, *indisposition to converse*, especially with strangers, to whom she makes determined answers; opposition excites rage and destructive tendencies; walks hurriedly, sings, dances, laughs and waves her hands; worse in the afternoon, evenings and at the approach of the menstrual period; *desire to bite, strike and run away*; *gay mania*, a merry craziness, with laughing and singing, tries to compose songs, and sings merry but senseless tunes, or whistles occasionally, but refuses to eat or drink, or sings or hums different airs, or smiles a long time to himself, or is disposed to sing or whistle, with frequent bursts of laughter, or is wild and wantonly merry, with inclination to quarrel without cause, or will tear off clothes, run out into the street

partially or wholly naked, gesticulating in a strange manner, crying, laughing, muttering and demanding foolish things; *suicidal mania*, with distaste for life and desire for death; wishes some one to kill him; attempts to jump out of the window; alternating with paroxysms of fury; *puerperal mania*, merry but quarrelsome; strikes and bites; starts in affright at the approach of others; tries to escape or hide; insomnia, fear of ghosts, moaning; begs those around her to get her out of the way and kill her.

Aurum.—Sleeplessness, anguish of mind, seems to have no friends; fits of anger, rashness and fury; *desperate actions and thrashing about*; speaks continually in questions and is quarrelsome; great depression, with suicidal tendency; *suicidal mania*, great desire to commit self-destruction, seeking every opportunity to do so; excessive desire for water, with melancholy notion that he was not intended for this world; anxious desire to take his own life, attended with derangement and cramps in stomach and bowels; *religious mania*, he imagines he is irretrievably lost, with desponding shouts and screams; *puerperal mania*, with precordial anguish, driving her from place to place; unhappy, with continual thoughts of suicide; prays all the time; imagines she is not fit for this world; weak memory and intellect.

Nux vom.—Obstinate and quarrelsome, increasing to violence; *suicidal mania*, desire for death, because his agony of mind allows him no repose, because present pain and misfortune seem insupportable to him; inclined to take his own life, with palpitation of heart and great anxiety; morose and taciturn; disposed to quarrel if disturbed; giddiness, with reeling; constipation; gastric disturbances; nymphomania.

Anacardium.—Sensation of being possessed of two opposing wills; is inclined to laugh when he ought to be serious, and does not incline to laugh when tempted by what is ludicrous; actions stupid and childish; rapid loss of self-reliance, memory and mental vigor; *incipient dementia*.

Mercurius.—Insomnia, with peevishness, irritable temper, great restlessness, apathy, sensation as if the head would burst; *suicidal mania*, with disgust for life, from want of courage to

meet trials and mortification, or desire for death, from an insupportable dislike for every person and thing, even those which are most loved.

Aconite.—*Acute mania*, attended with fear, despondency and apprehensions of future calamity; anxious lamentations accompanied by disheartening apprehensions; anxiety, attended with heat of the face and head, palpitation of the heart and coldness of the extremities; apprehensions of approaching death; *puerperal mania*, with great fear of death; ailments from fright or anger; fear of strangers, of not getting up; inconsolable anxiety; reproaching others for mere trifles.

Gelsemium.—*Acute mania*, attended with cerebral congestion; head hot, face flushed, eyes red and protruding; surface and extremities cold, or cold and hot alternately; wild demeanor; *puerperal mania*, with great depression of spirits, pain in the back of the head and neck, congestion of the base of the brain, dilated pupils, blur before the eyes, lochia arrested or very scanty.

Arsenicum.—Restless, sleepless and in constant mental agony; poor appetite, eats only under compulsion; pain in occiput, running up over the head to forehead; eyes have a blur over them so that she can scarcely see; says she cannot control her mind; tongue bright red and seamed; hands and feet cold; bowels constipated; *suicidal mania*, attempts to strangle herself with a string at night, though constantly watched.

Crocus.—Fickle, changeable disposition; cheerfulness, mirth, joy, sadness, despair all follow each other in rapid succession; *religious mania*, gloomy, sad mood, with great anxiety about the future.

Sepia.—Imagines things he does not want to imagine; uses wrong expressions, knowing them to be wrong; proposes to himself things contrary to his intentions; is in contradiction with himself; has paroxysms of laughter and weeping in alternation, without either of them resulting from a corresponding frame of mind; gastric disturbances, with constipation.

Cuprum.—*Acute, furious mania*, attended with full, quick pulse, red and inflamed eyes, wild looks, incoherent speech and rage, every paroxysm terminating in perspiration.

Tarantula.—Restlessness of the hands and legs, constant movement, cannot remain in one place; great and constant heat about the epigastrium; disposition to joke and laugh and play tricks, with impulsive movements; sudden, foxlike and destructive efforts, requiring the utmost vigilance to prevent damage, followed by laughter and then apologies; all the symptoms relieved by music; screams, sings, bites, throws things violently about, springs out of bed, destroying whatever she can get hold of; sleeps two days, then awakes with screaming; soils the bed with urine.

Compare, also, Cimicifuga, Veratrum, Platina, Ignatia, Cannabis ind., Phosphoric ac., Iodium, Pulsatilla, Zincum, Staphisagria, Alumina, Nitric ac., China, Rhus tox.

Auxiliary Treatment.—The patient should, if possible, be removed from his own home to a sanitarium, or place where the surroundings are such as to lead him to forget his malady, or at least to so occupy his mind by new objects as to divert it from the old, and not to call up, by sight or otherwise, any of those ideas or objects which occasioned, or are liable to renew or aggravate, the malady. Moral rather than physical restraint should be employed, the patient being at all times encouraged to exercise his own self-control. Hence his attendant should be a person of great discretion, self-control, kindness and watchfulness, the latter being exercised in such a manner as not to attract the patient's attention. Everything about the patient should be made to appear as cheerful as the circumstances of the case will admit. Thus the room ordinarily occupied should be light, well ventilated and ornamented with pictures, flowers and everything calculated to gratify the innocent tastes of the patient. Employment, recreation and various forms of amusement, suited to the capacity of the patient, should be provided for him, both as stimulants in the renewal of health and to prevent the mind reacting on itself. As the patient improves, his attention should be gradually, but cautiously, directed to former objects and associations, until all danger of shock or relapse has passed. The diet should always be generous and such as is suited to an anæmic or debilitated state of the system. Many a threatened attack of mania may

be prevented by the timely administration of a warm bath, stimulants and a generous diet.

DIPSOMANIA.

Synonyms.—Oinomania; *Fr.*, *Manie Ébrieuse, Manie Crapuleuse*; *Ger.*, *Trunksucht*.

Definition.—A morbid condition of the nervous system, characterized by an inordinate craving, generally periodic, for alcoholic stimulants.

Diagnosis.—This disease is liable to be confounded with habitual drunkenness. In the former, however, the craving exists independent of external circumstances of temptation, while in the latter it consists mainly in a desire to maintain a condition of stimulation to which the patient has become accustomed.

Pathology.—This form of insanity, like that of others, can generally be traced in the family history. The pathological changes are marked in all cases, but they vary greatly, according to the stage of the disease. There is always more or less atrophy of the cortical substance, with degeneration of the ganglion cells. As the tendency is to dementia, very few organs of the body escape disease, of which fatty degeneration of the heart, liver, kidneys and voluntary muscles is the most constant. Permanent intellectual and moral degradation characterizes the disease, and if the patient lives long enough he is almost certain, sooner or later, to become hopelessly demented.

Clinical Experience.—This is not very encouraging. *Sulphuric ac.*, *Tartar emet.*, *Angelica*, *China*, *Arsenicum*, *Nux vom.*, *Pulsatilla*, and especially *Strychnia* ($\frac{1}{60}$ gr. of the nitrate, three times a day for six weeks), have helped and sometimes cured individual cases; but unless the dipsomaniac can be secluded in an asylum long enough to work a change in the nutrition of the brain, the morbid tendency is not likely to be eradicated by any treatment, however judicious or prolonged it may be.

Therapeutic Indications.—See the following section, *mania a potu*.

MANIA A POTU.

Synonyms.—Delirium Tremens, Trembling Delirium; *Fr.*, *Délire Ébrieuse, Délire Crapuleuse*; *Ger.*, *Zitterwahnsinn*.

Definition.—A form of delirium, characterized by great mental agitation and muscular tremor, peculiar to persons addicted to the immoderate use of alcoholic stimulants.

Diagnosis.—It is scarcely possible to mistake the disease for any other, as, in addition to the history of the case, we have the characteristic symptoms, such as complete insomnia, tremor of the voluntary muscles, and, above all, the mental symptoms, such as imaginary fears, visions of snakes, insects, monsters, etc.

There are two forms, the acute (*mania a potu* proper), *without trembling*, and the chronic (*delirium tremens* proper), *with trembling*, after which the disorder is named.

Pathology.—The most recent observations and experiments conclusively prove that, contrary to the old notion, the phenomena of delirium tremens do not arise from the sudden withdrawal of an accustomed stimulus, but from the effects of its accumulation in the system, just as mercurial tremors arise from the inhalation of mercurial fumes. After a time, depending on the susceptibility of the drinker, the system becomes, so to speak, saturated with alcohol, and after that no more can be taken without producing the trembling and other nervous symptoms peculiar to the disease. No characteristic morbid changes are observed after death in the acute form; in the chronic they resemble, when present, those of *dipsomania*, which see.

Clinical Experience.—*Belladonna, Stramonium, Hyoscyamus, Opium, Cimicifuga, Cannabis ind., Capsicum and Tartar emet.* are all effective remedies, while *Arsenicum, Agaricus, Nux vom., Digitalis, Scutellaria* and *Cypripedium* are also of much benefit in particular cases.

Therapeutic Indications.—*Belladonna.*—Delirium, with visions of rats, mice, etc.; imagines he sees water running over the table and window panes; tries to extract one of his teeth; smiles and stammers; dry feeling in the throat, with difficulty

of swallowing; fever, with thirst; *cerebral congestion*; restless, anxious and unsteady in his walk and actions; trembling of the hands.

Stramonium.—Delirium, with frightful visions and hallucinations; sees animals and strangers attacking him from all sides; hides himself, or tries to escape; hears imaginary voices; face red and swollen; eyes glistening and staring; manner hurried and fitful; limbs in a constant tremor; talks absurdly, laughs, starts at every sound and movement and looks greatly frightened; complete insomnia.

Hyoscyamus.—Starts and trembles as if by fright; wants to hide from the light and from company; fears persecution; constantly tossing about at night, cannot sleep; derangement of the stomach, with loss of appetite; disposed to laugh at his own fears, yet trembles in every limb.

Opium.—*Stupor*, from which the patient starts in great fright or mutters in his sleep, talking deliriously; dreams of animals glaring at him with their fiery-red eyes; trembles, looks frightened and tries to escape; *becomes comatose*, with loud, snoring respiration, dilated pupils and half-closed eyes; reduced vital power.

Cimicifuga.—Complete insomnia; imagines he sees rats, mice, lizards and other strange objects; talks incessantly, changing from one subject to another without any good reason; pulse full and quick; eyes wild and staring; stomach disordered; cross and taciturn; tremor scarcely visible, but apparent to the touch; *occipital headache*.

Cannabis ind.—Illusions of a *spectral character* and of strange sounds at night; wakes before midnight overcome with fright; imagines he is going to be choked; all objects appear double their natural size; talks incoherently, stammering and stammering; everything, even his own hand, appears monstrously large.

Capsicum.—Prostration extreme, tremor excessive, delirium bland; thinks the ceiling is about to fall and crush him, causing him to jump from the bed as quickly as his weak condition would allow; tongue coated, pulse small and irregular, skin moist, forehead constantly bedewed with a cold, clammy sweat;

voice feeble, husky and tremulous; complete insomnia for three successive nights.

Antimonium tart.—Fearful delirium; constantly throwing pillows at imaginary demons; eyes red and injected; pulse quick and irritable; has neither eaten nor slept for more than a week; *gastric derangement from drinking beer*; low states of the system, with profuse, cool sweats.

Arsenicum.—Muscular tremors, with great prostration; fear, with great anguish and sweat, dread of ghosts, of thieves or of death, and especially of vermin crawling over the bed or over the hands; *gastritis*.

Gelsemium.—Delirium, with great nervous excitement, headache, fear and wakefulness; had not slept for ten nights; kicked off the footboard struggling with his attendant, constantly calling for more whisky; *produced sleep after morphia had failed*.

Compare, also, *Nux vom.*, *Gratiola*, *Coffea*, *Kali brom.*, *Ranunculus bulb.*, *Nux mosch.*, *Digitalis*, *Calcarea*.

Auxiliary Treatment.—Confinement always irritates the patient and increases his fears; no more restraint, therefore, should be placed upon his movements than is necessary to prevent accidents. The chief danger to be guarded against is exhaustion; hence care should be taken to provide for the nutrition of the impoverished brain and nerve-centres, by the free administration of food which can be easily digested and assimilated. Beef-tea, raw eggs and milk or warm coffee, coca, warm milk and egg-emulsion will usually give satisfactory results. Aitken recommends Cayenne pepper. The stimulus of such a spice, he says, given in soup, on the atonic stomach, will have a favorable influence on absorption. Lilenthal advises us to keep our patients on an exclusive milk diet, as it antidotes alcohol and sometimes causes a disgust for it.

DEMENTIA.

Synonyms.—Mental Decay; *Fr.*, *Démence*; *Ger.*, *Blödsinn*.

Definition.—A gradual decay of the mental faculties.

Diagnosis.—Acute primary dementia, which does not come

under the above definition, sets in rapidly without any preceding disorder, affects only young people, usually girls, and is amenable to treatment. Chronic primary dementia, though sometimes a sequel of the acute, usually comes on gradually, and when not caused by disease of the brain generally results from years of hard drinking, its chief symptom being loss of memory. Secondary dementia, which is the form to which the term is usually applied, is a sequel to previous mental disorder, such as melancholia and mania. These distinctions are sufficient for diagnostic purposes.

Pathology.—The pathological condition, in most cases of dementia, is one of diffuse interstitial inflammation of the great nervous centres, which results eventually in destruction of ganglion cells and atrophy of the nervous structures. Indeed, the degree of imbecility is generally pretty accurately measured by the amount of atrophy and destruction of ganglion cells which the cerebral nerve-centres have undergone.

Treatment.—On this point little can be said. The same careful tending and nursing are required as in infancy, the weakness and helplessness being equally great. Although, with the exception of the acute primary form, a cure is not to be expected, medicines are often of great utility. Such remedies as *Arsenicum*, *Acidum nit. and phosph.*, *Carbo veg.*, *China*, *Digitalis*, *Phosphorus*, *Nux vom.*, *Pydophyllin*, etc., are frequently required to render the patient more comfortable and to prolong his life; while during the earlier stages the decay of the mental faculties may be greatly retarded, and in some cases arrested, by *Anacardium*, *Ignatia*, *Phosphoric ac.*, etc., the selection being determined, as in all other cases, in accordance with the symptoms presented by the patient at the time of prescribing.*

* From the author's work on *Nervous Diseases*, p. 379.

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